

IN THE OSAN THE OS  
USANTÆUSANTÆ  
EUSANTÆUSANT  
ANTÆUSANTÆUS  
EUSANTÆUSANT  
SANTÆUSANTÆU  
EUSANTÆUSANT  
ANTÆUSANTÆU  
NTÆUSANTÆUSA  
USANTÆUSANTÆ  
ÆUSANTÆUSANT  
ANTÆUSANTÆUS  
USANTÆUSANT

ANTÆUS

37



# ANTÆUS

*Communicationes ex Instituto Archaeologico*

37/2021

*Sigel: Antaeus*



# ANTÆUS

37

*Communicationes ex Instituto Archaeologico*

Communicationes ex Instituto Archaeologico

Distribution of exchange copies by  
the Library of the Institute of Archaeology, Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán u. 4.

General Editor:

FRIDERIKA HORVÁTH

Editorial Board:

VIKTÓRIA KISS, BÉLA MIKLÓS SZŐKE, LÁSZLÓ TÖRÖK, CSILLA ZATYKÓ,  
MIHAEL BUDJA, CLAUDIUS VON CARNAP-BORNHEIM,  
SIR DAVID M. WILSON

The publication of this volume was supported by special grants of the Hungarian Academy of Sciences  
and the Secretariat of Eötvös Loránd Research Network

HU ISSN 0238-0218

Desktop editing and layout by Archaeolingua  
Printed in Hungary by the Prime Rate Kft.  
Cover by H&H Design

## INHALT – CONTENTS

<i>List of Authors</i>	6
<i>Abbreviations</i>	7
<i>In memoriam László Török (1941–2020)</i>	10
<i>István Koncz – Ádám Bollók: Elephant ivory artefacts in the Carpathian Basin during the 6th and 7th centuries: Chronology, distribution and cultural context</i>	15
<i>Miklós Takács: Einige siedlungsarchäologische Überlegungen zum Inhalt der Begriffe „Dorf“ und „Weiler“ im Kontext des Karpatenbeckens des 10.–11. Jahrhunderts – Zur Gräberfeldtypologie von László Kovács</i>	43
<i>László Kovács: Reflexionen auf die Abhandlung von Miklós Takács</i>	67
<i>László Révész: Friedhöfe und Siedlungen im Karpatenbecken des 10.–11. Jahrhunderts: Einige Anmerkungen zur Abhandlung von Miklós Takács</i>	79
<i>Péter Langó: Notes on the 10th–11th-century relations of female jewellery found in the Carpathian Basin with South-Eastern Europe reflected by two types of jewellery</i>	91
<i>György Terei: The relationship of Árpadian-age castles and settlements in Pest county</i>	173
<i>Elek Benkő: The medieval water supply system of Pilis Abbey</i>	193
<i>Katalin Szende: The material culture of urban pragmatic literacy in medieval Hungary</i>	225
<i>Bianka Gina Kovács: Late medieval ceramics with stamped decoration in Central Transdanubia</i>	249
<i>Ágnes Kolláth: The research history of early modern pottery in Hungary</i>	283
<i>Gyöngyi Kovács: Stoves in the Ottoman castle at Barcs, Drava valley, Hungary</i>	329
<i>Béla Miklós Szőke: Gussform eines türkisch-balkanischen Kopfschmuckes von Lenti-Előhegy (Komitat Zala, SW-Ungarn)</i>	381
<i>László Bartosiewicz: Fish consumption in the archiepiscopal residence of Esztergom in the context of fishing, aquaculture and cuisine</i>	387
<i>Erika Gál: Archaeozoological assessment of the refuse deposit of the archiepiscopal residence in Esztergom</i>	421

## LIST OF AUTHORS

BARTOSIEWICZ, LÁSZLÓ

Stockholm University  
Department of Archaeology and Classical Studies  
SE-106 91 Stockholm,  
Institutionen för arkeologi och antikens kultur  
laszlo.bartosiewicz@ofl.su.se

BENKŐ, ELEK

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
benko.elek@abtk.hu

BOLLÓK, ÁDÁM

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
bollak.adam@abtk.hu

GÁL, ERIKA

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
gal.erika@abtk.hu

KOLLÁTH, ÁGNES

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
kollath.agnes@abtk.hu

KONCZ, ISTVÁN

Eötvös Loránd University  
Institute of Archaeological Sciences  
H-1088 Budapest, Múzeum krt. 4/b  
fredgar22@gmail.com

KOVÁCS, BIANKA GINA

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
kovacs.bianka@abtk.hu

KOVÁCS, GYÖNGYI

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
kovacs.gyongyi@abtk.hu

KOVÁCS, LÁSZLÓ

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
kovacs.laszlo@abtk.hu

LANGÓ, PÉTER

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
lango.peter@abtk.hu

RÉVÉSZ, LÁSZLÓ

University of Szeged  
Department of Archaeology  
H-6722 Szeged, Egyetem u. 2.  
reveszlaszlo1986@gmail.com

SZENDE, KATALIN

Central European University  
Department of Medieval Studies  
H-1051 Budapest, Nádor u. 9.  
A-1100 Quellenstraße 51, Wien  
szendek@ceu.edu

SZŐKE, BÉLA MIKLÓS

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
szoke.bela@abtk.hu

TAKÁCS, MIKLÓS

Institute of Archaeology,  
Research Centre for the Humanities  
H-1097 Budapest, Tóth Kálmán utca 4.  
takacs.miklos@abtk.hu

TEREI, GYÖRGY

Budapest History Museum,  
Castle Museum, Medieval Department  
H-1014 Budapest, Szent György tér 2.  
Buda Castle Building E  
tereigy@btm.hu



## ABBREVIATIONS

ActaArchHung	Acta Archaeologica Academiae Scientiarum Hungaricae (Budapest)
ActaEthnHung	Acta Ethnographica Academiae Scientiarum Hungaricae (Budapest)
ActaOrHung	Acta Orientalia Academiae Scientiarum Hungaricae (Budapest)
ActaMusPapensis	Acta Musei Papensis. A Pápai Múzeum Értesítője (Pápa)
Agria	Agria. Az Egri Múzeum Évkönyve (Eger)
AH	Archaeologia Historica (Brno)
AHN	Acta Historica Neolosiensia (Banská Bystrica)
AJMK	Arany János Múzeum Közleményei (Nagykőrös)
AKorr	Archäologisches Korrespondenzblatt (Mainz)
Alba Regia	Alba Regia. Annales Musei Stephani Regis (Székesfehérvár)
AnalCis	Analecta Cisterciensia (Roma)
AnnHN	Annales Historico-Naturales Musei Nationalis Hungarici (Budapest)
Antaeus	Antaeus. Communicationes ex Instituto Archaeologico (Budapest)
Antiquity	Antiquity. A Review of World Archaeology (Durham)
AR	Archeologické Rozhledy (Praha)
ArchA	Archaeologia Austriaca (Wien)
ArchÉrt	Archaeologiai Értesítő (Budapest)
ArchHung	Archaeologia Hungarica (Budapest)
ArchLit	Archaeologia Lituana (Vilnius)
ArhSof	Археология. Орган на Националния археологически институт с музей – БАН (Sofia)
ARR	Arheološki Radovi i Rasprave (Zagreb)
Arrabona	Arrabona. A Győri Xantus János Múzeum Évkönyve (Győr)
AV	Arheološki Vestnik (Ljubljana)
Balcanoslavica	Balcanoslavica (Prilep)
BÁMÉ	A Béri Balogh Ádám Múzeum Évkönyve (Szekszárd)
BAR	British Archaeological Reports (Oxford)
BMÖ	Beiträge zur Mittelalterarchäologie in Österreich (Wien)
BudRég	Budapest Régiségei (Budapest)
Castrum	Castrum. A Castrum Bene Egyesület folyóirata (Budapest)
CommArchHung	Communicationes Archaeologicae Hungariae (Budapest)
Cumania	Cumania. A Bács-Kiskun Megyei Múzeumok Közleményei (Kecskemét)
DBW	Denkmalpflege Baden-Württemberg (Stuttgart)
EMÉ	Az Egri Múzeum Évkönyve (Eger)
EurAnt	Eurasia Antiqua. Zeitschrift für Archäologie Eurasiens (Bonn)
FolArch	Folia Archaeologica (Budapest)
FontArchHung	Fontes Archaeologici Hungariae (Budapest)
GMSB	Годишник на музеите от Северна България (Варна)
GZM	Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu (Sarajevo)
GZMS	Glasnik Hrvatskih Zemaljskih Muzeja u Sarajevu (Sarajevo)
HAH	Hereditas Archaeologica Hungariae (Budapest)

Hesperia	Hesperia. Journal of the American School of Classical Studies at Athens (Princeton)
História	História. A Magyar Történelmi Társulat, majd a História Alapítvány folyóirata (Budapest)
HOMÉ	A Herman Ottó Múzeum Évkönyve (Miskolc)
INMVarna	Известия на Народния музей – Варна (Varna)
IstMitt	Istanbuler Mitteilungen (Tübingen)
JAMÉ	A nyíregyházi Jósa András Múzeum Évkönyve (Nyíregyháza)
Jászkunság	Jászkunság. Az MTA Jász-Nagykun-Szolnok Megyei Tudományos Egyesület folyóirata (Szolnok)
JbAC	Jahrbuch für Antike und Christentum (Bonn)
JPMÉ	A Janus Pannonius Múzeum Évkönyve (Pécs)
KMMK	Komárom-Esztergom Megyei Múzeumok Közleményei (Tata)
LK	Levéltári Közlemények (Budapest)
MAA	Monumenta Avarorum Archaeologica (Budapest)
MacAA	Macedoniae Acta Archaeologica (Skopje)
MAG	Mitteilungen der Anthropologischen Gesellschaft (Wien)
MBV	Münchener Beiträge zur Vor- und Frühgeschichte (München)
MHKÁS	Magyarország honfoglalás és kora Árpád-kori sírleletei (Budapest)
MittArchInst	Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften (Budapest)
MFME	A Móra Ferenc Múzeum Évkönyve (Szeged)
MFME StudArch	A Móra Ferenc Múzeum Évkönyve – Studia Archaeologica (Szeged)
MMMK	A Magyar Mezőgazdasági Múzeum Közleményei (Budapest)
MŰÉ	Művészettörténeti Értesítő (Budapest)
MŰT	Művészettörténeti Tanulmányok. Művészettörténeti Dokumentációs Központ Évkönyve (Budapest)
NÉrt	Néprajzi Értesítő (Budapest)
NMMÉ	Nógrád Megyei Múzeumok Évkönyve (Salgótarján)
OA	Opisavla Archaeologica (Zagreb)
Offa	Offa. Berichte und Mitteilungen des Museums Vorgeschichtliche Altertümer in Kiel (Neumünster)
PA	Památky Archeologické (Praha)
Prilozi	Prilozi Instituta za povijesne znanosti Sveučilišta u Zagrebu (Zagreb)
PrzA	Przegląd Archeologiczny (Wrocław)
PtujZb	Ptujski Zbornik (Ptuj)
PV	Přehled výzkumů (Brno)
PZ	Prähistorische Zeitschrift (Berlin)
RégFüz	Régészeti Füzetek (Budapest)
RGA	Reallexikon der Germanischen Altertumskunde (Berlin)
RT	Transylvanian Review / Revue de Transylvanie (Cluj)
RVM	Rad Vojvođanskih muzeja (Novi Sad)
SbNMP	Sborník Národního muzea v Praze (Praha)
Scripta Mercaturae	Scripta Mercaturae. Zeitschrift für Wirtschafts- und Sozialgeschichte Gutenberg)
SHP	Starohrvatska Prosvjeta (Zagreb)
SlA	Slovenská Archeológia (Bratislava)
SlAnt	Slavia Antiqua (Poznan)

---

SIS	Slovanské štúdie (Bratislava)
SMK	Somogyi Múzeumok Közleményei (Kaposvár)
StComit	Studia Comitatus. A Ferenczy Múzeum Évkönyve (Szentendre)
StH	Studia Historica Academiae Scientiarum Hungaricae (Budapest)
StSl	Studia Slavica Academiae Scientiarum Hungaricae (Budapest)
StudArch	Studia Archaeologica (Budapest)
Századok	Századok. A Magyar Történelmi Társulat folyóirata (Budapest)
TBM	Tanulmányok Budapest Múltjából (Budapest)
Tisicum	Tisicum. A Jász-Nagykún-Szolnok Megyei Múzeumok Évkönyve (Szolnok)
USML	Utrecht Studies in Medieval Literacy (Turnhout)
VAH	Varia Archeologica Hungarica (Budapest)
VAMZ	Vjesnik Arheološkog muzeja u Zagrebu (Zagreb)
VMMK	A Veszprém Megyei Múzeumok Közleményei (Veszprém)
WiA	Wiadomości Archeologiczne (Warszawa)
WMMÉ	A Wosinsky Mór Múzeum Évkönyve (Szekszárd)
ZalaiMúz	Zalai Múzeum (Zalaegerszeg)
Zborník FFUK, Musaica	Zborník Filozofickej Fakulty Univerzity Komenského. Musaica (Bratislava)
ZbSNM	Zborník Slovenského Národného Múzea. História (Bratislava)
ZfAM	Zeitschrift für Archäologie des Mittelalters (Köln)
ZHVSt	Zeitschrift des Historischen Vereins für Steiermark (Graz)
Ziegelei-Museum	Ziegelei-Museum. Bericht der Stiftung Ziegelei-Museum (Cham)
ZRNM	Zbornik Radova Narodnog Muzeja (Beograd)

PÉTER LANGÓ

**NOTES ON THE 10TH–11TH-CENTURY RELATIONS  
OF FEMALE JEWELLERY FOUND IN THE CARPATHIAN BASIN WITH  
SOUTH-EASTERN EUROPE REFLECTED BY TWO TYPES OF JEWELLERY<sup>1</sup>**

**Zusammenfassung:** Die ungarische archäologische Forschung widmet sich in artefaktischer Hinsicht seit knapp 60 Jahren eingehend den südosteuropäischen Beziehungen des Ungarntums im 10. Jahrhundert. Béla Szőke ging in seiner programmatischen Zusammenfassung als Erster detailliert auf diese Quellen-Gruppe ein, Károly Mesterházy fasste 30 Jahre später die neueren Ergebnisse zusammen. Ziel des vorliegenden Aufsatzes ist, die neuesten Ergebnisse der seit letzterer Publikation vergangenen weiteren drei Jahrzehnte in Verbindung mit diversen Schmucktypen zu erläutern. Die Erweiterung des Fundmaterials im Karpatenbecken – gering, hinsichtlich der Bewertung der Gegenstandsart, dennoch maßgeblich – bzw. die neuen Ergebnisse breiter angelegter, regionaler Forschungen ermöglichen nicht nur eine umfassendere Bewertung der jeweiligen Denkmalgruppen, sondern auch die Analyse grundlegender Fragen, die zu einem vollständigeren Bild der Beziehungen zwischen dem Karpatenbecken des 10. Jahrhunderts und Südosteuropas führen können.

**Keywords:** Byzantine/Balkan earrings, Eastern Alpine finding horizon, 10th–11th-century artefacts, Carpathian Basin

From the aspect of material culture, the relations of 10th-century Magyars with South-Eastern Europe has been at the forefront of Hungarian archaeological research for sixty years. Béla Szőke was the first to refer to this group of sources in detail when discussing the goals of future research,<sup>2</sup> and thirty years later Károly Mesterházy summarised the new results.<sup>3</sup> This paper aims to present the research results in terms of some jewellery types during the three decades that passed since the latter author's work. The discovery of new artefacts in the Carpathian Basin – that are few but of cardinal importance for the analysis of this type of object – as well as the recent results of investigations in the wider region allow not only a more general interpretation of the assemblages in question, but also make possible the investigation of such general issues that may contribute to a better understanding of the connections between the Carpathian Basin and South-Eastern Europe in the 10th century.

<sup>1</sup> I received a lot of help from colleagues in writing the present study. I owe a debt of gratitude to Edit Király, Zita Léhner, Maja Petrinc, László Révész, Ágnes Ritoók, Rita Soós, Perica Špehar, Béla Miklós Szőke, Miklós Takács, and Attila Türk. I am grateful to Zsóka Varga for the drawings. The research project was supported by the National Research, Development and Innovation Office (NKFIH K 132030).

<sup>2</sup> *Szőke 1962.*

<sup>3</sup> *Mesterházy 1990; Mesterházy 1991; Mesterházy 1993; Mesterházy 1994.*

### 1. Pendants and earrings decorated with a crescent on their inner arch

#### 1.1. Items from the Carpathian Basin

The pieces of jewellery decorated with a crescent on their inner arch are relatively rare in the Carpathian Basin.<sup>4</sup> Béla Szőke had information about one, and Mesterházy knew two pairs of such artefacts,<sup>5</sup> which can be complemented with two more pieces in light of recent publications.<sup>6</sup> One of the three pairs of earrings was found in Székesfehérvár (*fig. 1. 1–3*), the other two were discovered at the site Szeged (*fig. 1. 4–6*). One of the more recently discovered items comes from Gyula (*fig. 1. 7*), and the other was found at Himód (*fig. 1. 8*). At all four sites (*fig. 2*), the artefacts were unearthed from burials. Before their analysis, however, it is worth presenting each item in more detail, describing their characteristics and physical properties.

Székesfehérvár-Demkőhegy (Fejér county), grave no. 36. The first reference to the 10th-century cemetery in the area of the sand quarry dates from 1878. Beginning with the last decade of the 19th century, following the discovery of several other finds, excavations were conducted at the site on numerous occasions.<sup>7</sup> During these, nearly half of the cemetery (43 graves) – that must have once comprised seventy to one hundred burials – could be observed and the associated finds were recorded.<sup>8</sup> The burial in which the earrings were discovered also yielded two silver wire earrings of round cross-section.<sup>9</sup>

The cast silver earrings (current location and inventory number: Hungarian National Museum, Budapest 106/1903.51–52) are well preserved (*fig. 1. 1–3*).<sup>10</sup> The size of the earrings: height: 3.95–3.96 cm, width: 2.5–2.56 cm. The width of the upper arch: 0.13–0.16 cm. Dimensions of the lower arch: width: 0.29–0.3 cm, thickness: 0.14–0.15 cm. Dimensions of the grape-cluster attached to the lower arch: length: 1–1.15 cm, width: 0.45 cm, thickness: 0.45 cm. Dimensions of the crescent-shaped decorative element: height: 1.38–1.41 cm, thickness: 0.14–0.16 cm. The distance between the two tips of the crescent: 0.76 cm. The length of the tag joined to the *lunula* decoration: 0.21–0.24 cm. Dimensions of the decorative elements separating the upper and lower arches: height: 0.35–0.37 cm, width: 0.25–0.3 cm. The weight of the artefacts: 3.7–4 g.

The earrings cast as one piece have two main parts. The upper arch is a wire of round cross-section separated from the lower arch by a bead. The lower arch has a rectangular cross-section and widens in the middle. In the line of the vertical central axis, a pendant imitating a bunch of grapes is attached to the lower arch, while on the inner side of the lower arch, there is a crescent-shaped decorative element. The jewellery is not corroded, but the casting is quite crude. The manufacturers did not shape the bunch of grapes very carefully, so the element imitating granulation is a bit schematic. The frame on the rim of the *lunula* – certainly imitating a filigree wire – also lacks elaboration (*fig. 1. 3*). The upper arch is joined to the lower arch on one side only. The artefact is open on the other side. This part was formed in this way during the casting. In other words, the missing piece was not cut out subsequently. This observation is also supported by the two terminals of the interrupted arch. There is clearly no trace of cutting or finishing after cutting. The manufacturers did not even pay attention to properly rasp or cut off the remainder of the wire connected to the globular ornament, where the lower and upper arches meet. The plane

<sup>4</sup> The rarity of these objects in the Hungarian archaeological material has already been noted by Béla Szőke in his fundamental summary, *Szőke 1962* 49–50.

<sup>5</sup> *Szőke 1962* 49–50; *Mesterházy 1991* 107.

<sup>6</sup> *Medgyesi 2015* 83; *Tomka 2010* 200–203.

<sup>7</sup> As shown by the data collected by Kornél Bakay, further finds were discovered at the site in 1929, *Bakay 1966* 55; *Petkes 2012* 91–92, No. 55.

<sup>8</sup> *Acsádi – Nemeskéri 1958* 508–509; *Bakay 1966* 44–50.

<sup>9</sup> *Bakay 1966* 53.

<sup>10</sup> The description by Bakay also says that the artefacts were made of silver, *Bakay 1966* 53.



Fig. 1. Pendants and earrings decorated with a crescent on their inner arch from the Carpathian Basin. 1–2. Székesfehérvár-Demkőhegy; 3. Detail photo of the crescent on one of the pieces from Székesfehérvár; 4–5. Szeged-Őthalom; 6. Detail photo of the neck of one of the pieces from Szeged; 7. Gyula-Téglagyár; 8. Himód-Káposztás-kertek (Photographs: ©Péter Langó)

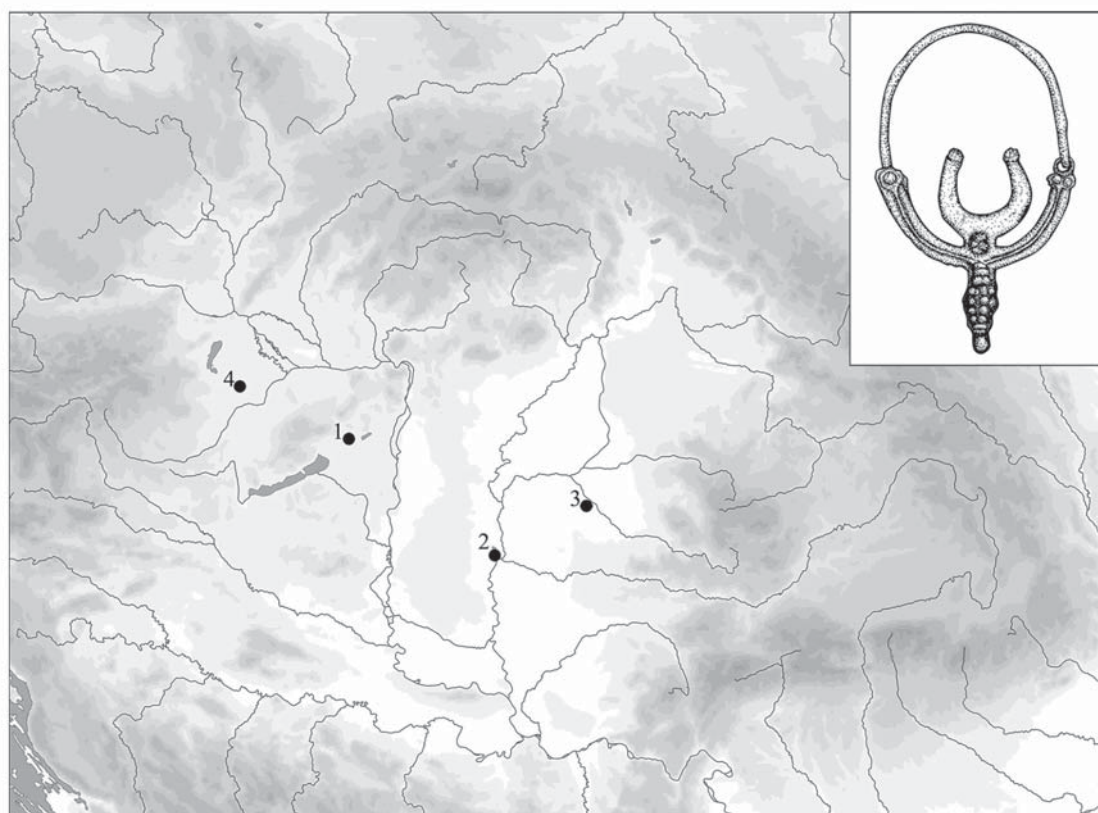


Fig. 2. Distribution of the pendants and earrings decorated with a crescent on their inner arch from the Carpathian Basin. 1. Székesfehérvár-Demkőhegy; 2. Szeged-Öthalom; 3. Gyula-Téglagyár; 4. Himód-Káposztás-kertek

of one of the pieces of jewellery is not perpendicular: the crescent-shaped ornament bent during use. The technical standard of the castings is also demonstrated by the fact that several inclusions can be seen in one of the objects. These minor defects due to casting were not removed by subsequent rasping nor were they engraved, which also shows that they were pieces of jewellery with simple finishing.<sup>11</sup>

Szeged-Öthalom (Csongrád county), grave no. 13/1950.<sup>12</sup> The pair of earrings were discovered in a part of a cemetery comprising thirteen graves, in 1950. They belonged to a female burial and

<sup>11</sup> Čorović-Ljubinković 1951; Mesterházy 1991.

<sup>12</sup> In my paper, the numbering of the graves differs from what was used by previous researchers. Csanád Bálint, publishing the results of the 1950 excavation and assuming that the graves discovered in 1879 and excavated in 1950 belonged to the same cemetery, suggested that the numbering of the burials should be continuous and the original grave numbers (from 1879 and 1950) should be indicated in brackets. Afterwards, researchers employed the continuous numbering of the graves proposed by Bálint, interpreting the burials discovered there as parts of the same cemetery (see, for example, Kovács 1989 61; Kovács 2011 145). Although recent research has clarified the relationship of the parts of the cemetery, it is still controversial whether they can be interpreted as one cemetery or as independent sites. It is not the objective of the present paper to explore this question, but until it is decided, we think it is worth keeping the *grave number/year* format in brackets as given by Bálint, and to call attention to the fact that the differing grave numbers in the previous literature can be explained by the state of research mentioned above.

were found according to the position of wearing, on either side of the skull.<sup>13</sup> Additionally, the burial contained a string of beads, two bronze wire bracelets with a rounded cross-section and pointed terminals, as well as an iron arrowhead.<sup>14</sup>

The cast silver earrings (current location and inventory number: Móra Ferenc Museum, Szeged 53.4555.23) are preserved in a poor condition (*fig. 1. 4–6*).<sup>15</sup> One of the items is broken, the other is intact.<sup>16</sup> The size of the earrings: height: 4.48–4.53 cm, width: 2.6–2.69 cm. The thickness of the upper arches: 0.13 cm. Dimensions of the lower arches: width: 0.31–0.31 cm, thickness: 0.13–0.15 cm. Dimensions of the grape-cluster attached to the lower arch: length: 1.16–1.23 cm, width: 0.36–0.48 cm, thickness: 0.46 cm. Dimensions of the crescent-shaped decorative element: height: 1.37–1.43 cm, width: 1.17 cm. The weight of the artefacts: 3.2 g.

The earrings are cast as one piece and have two main parts. The upper arch is made of a wire of a round cross-section, which is separated from the lower arch on each side by a decorative element reduced into a ribbed bead. The finds have a hook-and-eye catch. The eye part is found on the lower arch in both pieces.<sup>17</sup> The lower arch has a rectangular cross-section, which is divided into two parts along its midline by a rib imitating a semi-circular wire ornament. On the vertical central axis of the artefacts, a decorative element imitating a bunch of grapes is attached to the outer edge of the lower arch, while on the inner side of it, there is a crescent-shaped decorative element. The object is not corroded, the bunch of grapes is carefully finished; it is interrupted at the semi-circular protrusion on the lower arch, and then continues above the rib (*fig. 1. 6*).

<sup>13</sup> The location of the site and its association with the 10th-century graves excavated at Szeged-Öthalom in 1879 (*Varázseji 1881; Lenhossék 1882*) was debated for a long time, *Párducz 1960; Bálint 1968; Bálint 1991* 251, Nr. 249a; *Vörös 1990; Kürti 1983* 249–250; *Kürti 1994*. In connection with another cemetery fragment at Öthalom, Attila Türk and Gábor Lőrinczy successfully identified the sites of previous excavations and their relationship to each other, *Türk – Lőrinczy 2015* 41–42. The results of their investigations were also confirmed by the research carried out by Csaba Szalontai, *Szalontai 2016; Szalontai 2019* 179; *Révész 2020* 378–379. When interpreting the results of the 2009 excavations, the question and evaluation of these burials or groups of burials located at a distance of a few hundred metres emerged anew. A starting point for a new forward-looking approach to the question was offered by the excavations at Öthalom themselves, *Türk – Lőrinczy 2015* 44–45. Türk and Lőrinczy suggested the use of the term “burial area” instead of “cemetery”, which has already brought many new results regarding the study of 10th-century sites in other Carpathian Basin regions, as well, *Langó 2019* 131–132; *Révész 2020* 389–392, 411, 417–422, 434–441. However, the relationship of the sites at Öthalom remained unsolved. The aforementioned investigations have demonstrated that there may have been at least three different sites in the Öthalom part of Szeged in the 10th century. The issue was further clarified by the assessment of the 2009 cemetery fragment based on radiocarbon dating and archaeological analysis. Based on the analysis carried out by Türk and Lőrinczy, the burials discovered in 2009 can also be divided into at least two phases belonging to different periods. The early ones can be dated to the end of the 9th century, while the graves of another community buried here must have been made in the second third of the 10th century, *Türk – Lőrinczy 2015* 98–99. Accepting the definition of “burial area”, László Révész arrived at a completely different conclusion. He classified not only the finds discovered at a considerable distance from each other in 2009 under the concept of the “Öthalom burial area”, but also the burials unearthed during the excavations conducted in 1879 and 1950. Consequently, he believed that the finds discovered in 2009 could also be interpreted in this context. It is, therefore, unnecessary to divide the finds discovered then into two periods. Instead, we can say that this burial area was used from the beginning of the 10th century to the second third of the same century, *Révész 2020* 378–379, 411, 426–427. The 10th-century finds discovered in the area can be interpreted satisfactorily after further detailed analysis.

<sup>14</sup> *Bálint 1968* 62–64.

<sup>15</sup> Csanád Bálint described the objects as bronze finds, *Bálint 1968* 62. Based on their current cleaned state, the finds must have been made of some silver alloy, but their actual composition could only be determined exactly after carrying out an archaeometric analysis on them.

<sup>16</sup> At the time of their discovery, the objects were still intact as is shown by *Bálint 1968* 67, Pl. X. 1–2.

<sup>17</sup> Currently, the hook part is glued to the loop, so its diameter cannot be measured in itself.



The surface of the crescent-shaped decorative element is smooth, its points end in spheres. The surface of the pieces of jewellery is worn. They bear no sign of subsequent engraving.

From a burial – of unknown number – of the cemetery unearthed at the archaeological site Gyula-Téglagyár (Békés county). József Impolom excavated 94 burials of the cemetery – estimated to have comprised 170 graves – that was discovered in 1941.<sup>18</sup> However, no record has remained of a significant part of the burials and the position of the finds. In the case of individual finds, including the earring to be studied here, the circumstances of discovery cannot be determined more precisely.<sup>19</sup> The piece of jewellery has currently the same inventory number as two other earring fragments that differ in terms of design from the earring explored in our study.<sup>20</sup>

The cast bronze earring (current location and inventory number: Erkel Ferenc Museum, Gyula 66.32.144) is a fragmentary piece preserved in a poor condition (*fig. 1. 7*). The size of the earring: height: 2.51 cm, width: 2.67 cm. The thickness of the upper arch: 0.09 cm. Dimensions of the lower arch: width: 0.28 cm, thickness: 0.28 cm. Dimensions of the crescent-shaped ornament: height: 1.33 cm, width: 1.32 cm, thickness: 0.15 cm. Dimensions of the sphere ornament separating the lower and upper arches: height: 0.65 cm, width: 0.62 cm, thickness: 0.05 cm. The weight of the artefact: 2.5 g.

This is a badly preserved, heavily corroded, damaged item. Only the fragmentary lower arch and the two stubs of the upper arch starting from the lower arch have remained of it. One of the spheres of sheet metal on the lower arch has been preserved fragmentarily, the other one is missing. One of the ornaments joining the vertical axis of the heavily corroded and damaged lower arch is missing. The crescent-shaped element is damaged (or defectively cast?), and badly preserved. The stubs of the upper arch are made of wires of a round cross-section. The lower arch is oval in its cross-section, much thicker than the upper arch, and damaged. Its sides were once decorated with cast beaded wires imitating granulation (three cast beaded wires placed at equal distances from each other: the first running on the outer edge of the arch, the second on the inner edge, and the third between the two; the ornament in the middle imitated a twisted wire), the traces of which are still visible. The crescent-shaped ornament has several holes in it. However, it cannot be determined whether these holes were casting deficiencies or this item of poor quality was originally intact at the time of its use and these defects only appeared after excavation. The remaining conical sphere is made of two sheets of metal soldered together and is broken in many places.

Himód-Káposztás-kertek (Győr-Moson-Sopron county), grave no. 118. In 2000, Ildikó Egry and Péter Tomka unearthed a part of a cemetery along a gas pipeline crossing the site. The 152 burials unearthed by them were dated between the 9th and 11th centuries. Grave no. 118 belonged to the 10th/11th-century part of the cemetery lying on the northern slope of the hillside.<sup>21</sup> In addition to the earrings, the burial contained the remains of a twisted neck-ring with a loop-and-eye catch broken into three pieces.

The cast silver earring (current location: Xantus János Museum, Győr) is a well-preserved, restored piece (*fig. 1. 8*). The size of the artefact: height: 4.96 cm, width: 2.5 cm. The thickness of the upper arch: 0–13 cm. Dimensions of the lower arch: width: 0.28 cm, thickness: 0.28 cm.

<sup>18</sup> *Bakay 1978* 174–180; *Szatmári 1995* 223; *Révész 2020* 129.

<sup>19</sup> *Medgyesi 2015* 70.

<sup>20</sup> One fragment is the remnant of a silver earring with a beaded pendant (for its photo, *Medgyesi 2015* 81, the fragment on the right), and the other is the fragment of a silver earring with granulation decoration originating from South-Eastern Europe. The latter was published by Pál Medgyesi together with the earring also discussed by us, *Medgyesi 2015* 83. However, the two fragments differ not only in their material but also in their design. The fragment, interpreted as an upper arch in the book by Medgyesi, was, in fact, the lower arch of an earring. Unlike the item described here, it was decorated with real granulations and could have been made of silver (instead of a copper-based) alloy.

<sup>21</sup> *Egry – Tomka 2000* 148; *Tomka 2010* 201.

Dimensions of the crescent-shaped ornament: height: 1.08 cm, width: 0.94 cm, thickness: 0.25 cm. Dimensions of the grape-cluster ornament joining the lower arch: length: 1.28 cm, width: 0.46 cm, thickness: 0.4 cm. The weight of the artefact: 4.3 g.

It is a well-preserved, restored, adhesive-bonded item. The earring is cast as one piece and has two main parts. The upper arch is a wire of round cross-section separated from the lower arch on each side by a decorative element simplified into a ribbed bead. The piece of jewellery has a hook-and-eye catch. In both pieces, the loop part is found on the lower arch. The lower arch has an oval cross-section, and an articulated rib ornament runs along the midline of the arch on each side. On the inner edge of the arch, there is a crescent-shaped ornament with an oval hole in the middle. The two tips of the *lunula* part terminate in beads. On the outer edge of the lower arch, on the central axis of the object, there is a grape-cluster ornament. The ribbed segmentation imitating a bunch of grapes is crude. No sign of wear or trace of subsequent engraving can be seen on the surface of the earring.

The finds from Székesfehérvár, Szeged, and Himód have a similar design in many respects. The lower arches of the earrings discovered in Szeged and Székesfehérvár are similar, and the imitation of the wire ornaments on the lower arches bears a close resemblance, as well. However, there are also several minor differences between these pairs of jewellery. The finds from Szeged were prepared with much greater care than the items from the Székesfehérvár-Demkóhegy site. In the case of the Szeged items, even the locks of the earrings are carefully formed; additionally, the imitated wire ornaments on the lower arches are more sculpted, and the cast imitations of granulation are also less schematic. The crescent-shaped elements of the Szeged-Öthalom antiquities are also framed by a thickened, even rim, whereas in the case of the jewellery from Székesfehérvár-Demkóhegy, this part also seems to be rough-and-ready (*fig. 1. 3*). The imitation of granulation on the tips of the crescent horns is also carefully formed in the items from Szeged, while on the items from Székesfehérvár, this element can only be suspected. On the Szeged earrings, the tags of the crescent-shaped ornaments are decorated with two pieces of false granulation each (*fig. 1. 6*). In contrast, the earrings from Székesfehérvár have no such decorations. Regarding the design of the *lunula*, the find from Himód shows a divergence from the other pieces (*fig. 1. 8*). The item from Gyula is significantly different from other artefacts found in the Carpathian Basin, both in terms of its raw material and the design of the jewellery (*fig. 1. 7*). In the case of the latter artefact, the remnant of the conical sphere made of sheet metal and attached to one end of the lower arch is different, just as the form of the crescent-shaped ornament and the decoration of the wire on the lower arch. Based on this, it differs from the earrings discovered at the other sites even more than those from one another.

The southern connections of this type of artefact were already recognised by Béla Szőke,<sup>22</sup> but Vojislav Jovanović was the first to investigate them in detail in connection with the finds from Kosovo Field (Kosovo).<sup>23</sup> The position of these types of jewellery in the contemporary Hungarian material culture was later presented by Csanád Bálint,<sup>24</sup> next by Jochen Giesler,<sup>25</sup> and finally by Károly Mesterházy<sup>26</sup> in a broad perspective. The current analysis is made possible by the fact that, in addition to a few new finds discovered in the Carpathian Basin, 62 more items

<sup>22</sup> The discovery made by Béla Szőke is also worth highlighting in relation to the object type because its South-Eastern European background was still not unanimously accepted in Central European research when his work was published. This is well demonstrated by Bořivoj Dostál's approach (*Dostál 1965* 385), who described these pieces "als direkte Importe aus Mähren". On the background of the mistakes made by the Moravian researcher see *Mesterházy 1990* 107.

<sup>23</sup> *Jovanović 1976* 135.

<sup>24</sup> *Bálint 1991* 191–193.

<sup>25</sup> *Giesler 1981* 97–99.

<sup>26</sup> *Mesterházy 1990* 107–108.

from 25 sites<sup>27</sup> mainly belonging to present-day Croatia, Bosnia, Macedonia, Greece, and Bulgaria could be collected from scholarly literature (*Table 1*). This number allows us to divide the finds into groups on the basis of their manufacturing and design and thus classify the archaeological material, in light of which the artefacts from the Carpathian Basin can also be evaluated.

### 1.2. Classification of the types of earrings and pendants

During previous research, the analysis of this type of artefact in terms of design was mainly carried out in the narrower geographical context. Although individual researchers tried to involve regional parallels in the evaluation of the material as much as possible, they normally employed classifications where these artefacts were interpreted as sub-types of finds that showed some similar characteristic features.<sup>28</sup> Conversely, new studies interpreted earrings and pendants with a crescent-shaped ornament on the inner side of the lower arch as an independent type everywhere.<sup>29</sup> Jochen Giesler,<sup>30</sup> – and more recently – Maja Petrinec, and Béla Miklós Szőke have drawn attention to another important aspect. Based on the items found in the Dalmatian archaeological material, the Croatian expert referred to these artefacts as “jewellery of the head” altogether.<sup>31</sup> In his latest summary, Béla Miklós Szőke presented how this item of wear transformed in 9th-century Central Europe.<sup>32</sup> The subtle distinction they suggested to be made between earrings and pendants is easy to understand if we take into account the size and manufacturing properties of the items discovered in Croatia. The items found there were less likely to be worn in the earlobes. They must have been rather pendants attached to the headgear, or a band, or perhaps a ribbon adorning the hair.<sup>33</sup> The pair of jewellery found in grave no. 46 of the site Maticane-Berg were also worn in this way. Based on the drawing made of the grave, the artefacts were found on the right side of the body, at some distance from the skull. Based on their position, they must have been pendants rather than earrings (*fig. 5. 3*).<sup>34</sup> Similar items belonging to the same assemblage, for example, the four such finds discovered on Mount Čečan in Kosovo (*fig. 5. 1*),<sup>35</sup> as well as the observations made in the Ptuj cemeteries<sup>36</sup> (*fig. 10. 2*) and

<sup>27</sup> In addition to the twenty-five sites, I was able to collect several stray finds from Bulgaria the provenance of which can only be connected to a wider region. Furthermore, there were two pieces of jewellery – perhaps one of the most elaborately finished pairs belonging to this type – the provenance of which could not be identified at all.

<sup>28</sup> The type of artefact was fundamentally interpreted in this way by *Jovanović 1976* 135; *Važarova 1976* 358–361; *Dončeva-Petkova – Ninov – Parušev 1999* 100. Such a division was used by *Dostál 1965* 385–387; *Giesler 1981* 98–102. More recently: *Sokol 2016* 175–186.

<sup>29</sup> *Mesterházy 1990* 107–108; *Mesterházy 1991* 166; *Grigorov 2007* 40; *Petrinec 2009* 254–256.

<sup>30</sup> *Giesler 1981* 94–103.

<sup>31</sup> *Petrinec 2009* 254–256. The term “jewellery of the head” was introduced by Béla Szőke in Hungarian archaeological terminology, *Szőke 1962* 35.

<sup>32</sup> *Szőke 2020* 445.

<sup>33</sup> The possibility of this is supported by the find-circumstances presented by Elica Maneva in connection with grave no. 4 of the site Krstevi in Macedonia (*Table 1. 18*), where the researcher also managed to observe the silk remains of the veil corroded to the earrings, *Maneva 2000* 87. Maja Petrinec (e.g., *Petrinec 2003*) and researchers in Croatian in general differentiate between pendants (*sljepoočničarke*) and earrings (*naušnica*). See, for example, *Filipec 2003*; *Tomičić 2003*; *Piteša 2014*; *Sokol 2016*.

<sup>34</sup> *Jovanović – Vuksanović 1981* Y 247.

<sup>35</sup> *Jovanović 1976*.

<sup>36</sup> Grave no. 104 of the cemetery excavated in the vicinity of the Ptuj Castle yielded two such finds together with two crescent-shaped pendants, while grave no. 296 of the same cemetery contained several other pieces of jewellery decorated with bunches of grapes. In both cases, these finds were discovered on both sides of the skull, along with other pendants and rings, *Korošec 1999* 58. In grave no. 2 of the cemetery excavated at the Spodnija Hajdina site, the item found together with pieces of S-terminalled ring jewelry was on the right side of the skull, *J. Korošec 1947* 29.

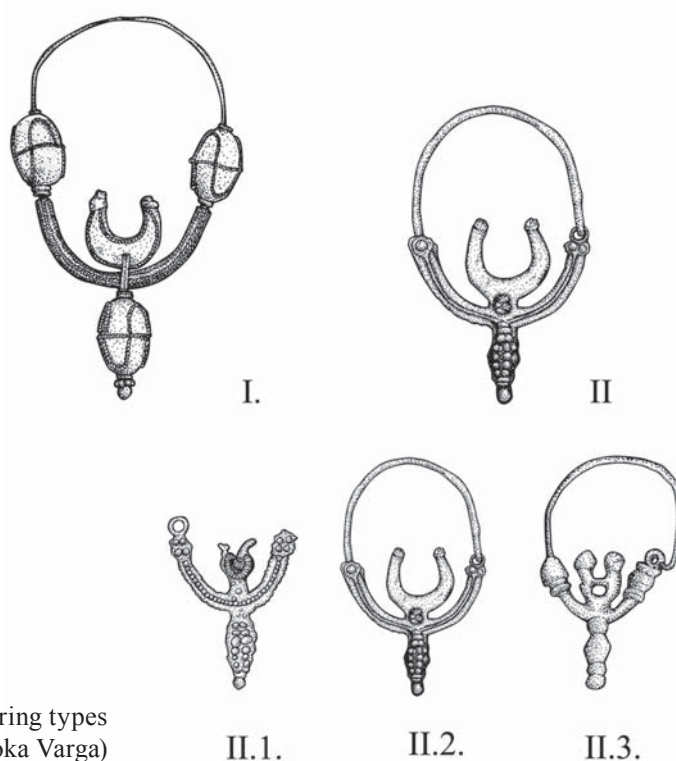


Fig. 3. Classification of earring types  
(Drawings: ©Zsóka Varga)

the burials excavated in Gomjenica<sup>37</sup> (*fig. 9. 2, fig. 10. 1*) also suggest that these objects were more likely to be used as pendants.<sup>38</sup> Those pieces of jewellery to which textile remains have corroded can probably be interpreted as pendants, as well. Such finds were discovered in grave no. 4 of the Krstevi cemetery<sup>39</sup> and in Aerino (*fig. 6. 6–7, fig. 10. 7–8*). At the latter site, the traces of textile have been preserved on the upper arch of one of the finds, as it can be seen on its image (*fig. 10. 7*).<sup>40</sup>

However, most researchers still regard these types of artefacts as earrings. In the case of a significant proportion of the finds, it is not possible to decide whether they were used as pendants or earrings,<sup>41</sup> as they were discovered in the graves (whether we want to interpret the individual finds as either earrings or pendants) in very similar positions. Often, the size of the objects does not help to differentiate them, either. Even in the case of authentically unearthed and observed finds, often only one piece of jewellery was discovered on each side of the skull, and there was no ring jewellery to help decide whether the artefacts or pairs of artefacts were pendants.<sup>42</sup>

This type of object can fundamentally be divided into two groups. Type I comprises those pieces that were made of several parts and held together by soldering. Their cast imitations (and simpler versions) constitute Type II. There are also transitional items, where spheres of sheet metal typical of Type I were soldered to the cast pieces (as in the cases of the artefacts from Gyula and Odarci) (*fig. 1. 7, fig. 9. 9*), but these finds are principally cast pieces, so they should be classified as Type II (*fig. 3*).

<sup>37</sup> The items found in Gomjenica, similar to the Ptuj find, were discovered on both sides of the skull along with several other types of pendants, *Miletić 1967* 85, 101–102.

<sup>38</sup> *Korošec 1999* 58.

<sup>39</sup> *Maneva 2000* 87.

<sup>40</sup> *Bosselmann-Ruickbie 2011* 255.

<sup>41</sup> *Sokol 2016* 175–186.

<sup>42</sup> The different viewpoints expressed in research regarding the terminology of earrings, hoop jewellery, and pendants, as well as the questions related to the wearing of the objects are summarised by *Rjabceva 2005; Grigorov 2007* 11–12.

In connection with the classification of this type of object, it is worth presenting the individual approaches according to which other researchers have grouped these finds. Two representative approaches are worth mentioning here. Valeri Grigorov, who relied on archaeological material from Bulgaria, grouped the pieces of jewellery according to the decoration found on the lower arch of the earrings. The distinction was based on differences in the design of the ornament found on the outer edge of the lower arch, along the central vertical axis of the pieces of jewellery. Accordingly, this type of jewellery was divided into three groups. In the case of Type 1, a pierced ornament cast as one piece was placed on the lower arch and the wire was led through that. Type 2 comprises pieces decorated with a bunch of grapes, while in the case of Type 3 the lower arch is separated from the upper arch by two ball-shaped decorations, and the outer edge of the lower arch is closed by an additional globular or conical ornament (*fig. 12. 3*).<sup>43</sup>

A different logic was followed by Károly Mesterházy, who classified the various pieces of jewellery (aptly described by another researcher as Ψ-shaped earrings/pendants)<sup>44</sup> according to the decoration of their lower arch.<sup>45</sup> He was also the one who called attention to some important features of contemporary jewellery-making practices in South-Eastern Europe. In this period, “hybrid” items were quite common, which had the characteristics of several different types of earrings.<sup>46</sup>

Taking these approaches into account, Type II can be subdivided into three groups based on the design of the lower arch (*fig. 3*). Sub-Type 1 includes those cast items where an imitation of granulation can be still observed on the lower arch. Sub-Type 2 comprises items that bear a decorative element imitating a plain wire strand on each longitudinal side of the lower arch having a rectangular cross-section. The lower and upper arches are separated by a disc-shaped element on each side. Finally, the lower arch of the pendants classified as Sub-Type 3 is unadorned. It is important to emphasise, however, that this classification is exclusively based on design. According to the present collection of data, those finds that belong to the individual sub-groups of Type II do not form different groups either in terms of chronology or geography. The sub-division rather reflects the stages of some theoretical transformation and still does not make possible the determination of chronological and geographical groups.

According to the classification above, the three sites in Hungary belong to Type II. The piece from Gyula belongs to Sub-Type II.1 because the cast piece of jewellery with the imitation of beaded wire has the characteristic features described in the classification. The pieces of jewellery from Székesfehérvár and Szeged, on the other hand, belong to Sub-Type II.2. In the case of both pairs of artefacts, we can observe the emphatic decoration imitating wire strands on the two longitudinal sides of the lower arches with a rectangular cross-section (*fig. 1*).

<sup>43</sup> *Grigorov 2007* 40. If we try to apply the division described by the Bulgarian specialist more widely, we might face several difficulties. The solution he proposes takes into account with similar weight the different manufacturing techniques (equally classifying to Sub-Type 1 those pieces where the ornament on the central axis is a separate casting, those items that were cast as one piece, and the objects that were soldered together from individual parts) and decorations of different shapes (that is the types of ornaments appearing on the outer edge of the lower arch: classifying the ornaments shaped like a bunch of grapes as Sub-Type 2 and the globular ornaments as Sub-Type 3) observed on the jewellery. Probably, this approach is the reason why Valeri Grigorov also classified the piece from Szeged presented above as Sub-Type 3, although, in my opinion, it belongs to Sub-Type 2. Another problem is that there are pieces (from Agia Triada, Azoros, Čean, Gyula, etc.) where the ornaments connected to the lower arch broke off (*Jovanović 1976* 127), so it is difficult to associate them with any of the groups established by him.

<sup>44</sup> *Bosselmann-Ruickbie 2012* 101.

<sup>45</sup> *Mesterházy 1991* 148.

<sup>46</sup> *Mesterházy 1991* 148. For the combinations of the individual types, also *Petrinec 2003* 530–531.

Nevertheless, before evaluating the items discovered in the Carpathian Basin, it is worth reviewing the general characteristics of each group of artefacts.<sup>47</sup>

### 1.3. *The characteristics of Type I*

A significant part of the artefacts that I collected from scholarly literature belongs to Type I.<sup>48</sup> The finds that I could classify here were made of silver without exception.<sup>49</sup> During the manufacturing of the lower arch, in addition to filigree strands and beaded wires soldered to the arch, hoops holding further thin pieces of wire were also soldered to some items.<sup>50</sup> The element placed on the outer edge of the lower arch, along the vertical axis of the jewellery, was in most cases a conical or globular,<sup>51</sup> or sometimes, an openwork ornament.<sup>52</sup> Less often, a decorative element in the shape of a bunch of grapes is found at this part of the jewellery.<sup>53</sup> Spherical ornaments are usually joined to the lower arch by a short tag, which is often accentuated by granules, whereas in the case of the grape-cluster decoration, the ornament made up of granules is soldered directly to the lower arch. In the case of the more carefully finished items, the tag connected to the sphere could be decorated in various ways: it was often composed of a series of large granules,<sup>54</sup> but sometimes several rows of smaller granules were used.<sup>55</sup> In some of the objects, the tag attached to the lower arch is not cylindrical but truncated cone-shaped,<sup>56</sup> and there are also finds where the cylindrical tag is pierced in the shape of a cross.<sup>57</sup> The spherical ornaments were also further embellished:

<sup>47</sup> I have provided the serial numbers of the sites indicated in *Table 1* as a reference in the footnotes related to the text. I did not include in the table those pieces from the Carpathian Basin that are described in the text in detail. I referred to them directly in the text. For literature on the individual finds, see the table.

<sup>48</sup> Type I comprises 39 such finds, while Type II has 25 items together with the finds discovered in the Carpathian Basin.

<sup>49</sup> *Table 1. 5–7, 9–11, 16–20, 23–24, 30–31, 33–35.*

<sup>50</sup> *Table 1. 34–35.* Beads were often placed on the wire. There are many 10th-century examples of this solution. It can be observed on some pieces of the Cretan and Preslav Treasures and other unique assemblages, *Coche de la Ferté 1957; Totev 1982; Totev 1993; Gorny und Mosch 145* no. 122; *Langó 2010; Stanilov 2019; Bosselmann-Ruickbie 2011* 210–216, 245–248, 254. This practice was not novel in the 10th century, it evolved much earlier (in the late 5th century), *Cat. Bonn 2010* 179; *Gorny und Mosch 145* no. 121. In the case of the items I examined, no such beading remained, so it cannot be decided whether this feature is merely an imitation or, these thin pieces of wire were torn off from the jewellery earlier, during use.

<sup>51</sup> *Table 1. 5–7, 10–11, 16, 18, 23–24, 30–31, 35.* The stray item kept in the Museum of Targovište must have also had a globular ornament (*Table 1. 30*), which is suggested by the fragment of pendant preserved together with this item. I would like to thank Bojan Totev for allowing me to study the items.

<sup>52</sup> *Table 1. 32.* Conical and globular ornaments are usually made of two pieces of thin sheet metal soldered together along the central horizontal axis, similar to, for example, ball buttons or globular ornaments of earrings with beaded pendants. Unfortunately, there are some Macedonian items (*Table 1. 16*) where it is hard to decide whether the lower arch was made of several pieces or cast as one piece. *Maneva 1992* 53.

<sup>53</sup> *Table 1. 17, 19–20.*

<sup>54</sup> *Table 1. 11, 18.*

<sup>55</sup> *Table 1. 10, 23–24.* With regard to the tag, it is also worth noting that the tag parts of the items found in grave no. 4 of the Krstevi site (*fig. 6. 6–10*) and the stray pair of earrings preserved in the Bulgarian National Museum (*fig. 8. 6–7*) were designed similarly. A tag element like this cannot be observed in other finds, so it is plausible that this solution was a feature typical of a minor region/workshop/master (?).

<sup>56</sup> *Table 1. 10.*

<sup>57</sup> *Table 1. 16.* In the case of the jewellery found in Demir Kapija, the different sources of information about the objects showed a different picture (*fig. 6. 1–2*). In the drawings, the thick tag was represented as decorated only with granulations (*Aleksova 1966*), while the photograph of one of the objects shows that the tag may have been pierced in the shape of a cross, *Aleksova 1970* 98. However, the question cannot be decided on the basis of the literature available (as shown by the data at no. 15 in *Table 1* and the note to this).

most frequently, two pieces of beaded wire were soldered close to each other at the joint of the two hemispheres,<sup>58</sup> but occasionally several plain wires could be soldered to it, as well.<sup>59</sup> There are also examples where even the surface of the globular ornament was accentuated by granulation,<sup>60</sup> or beaded wires were soldered to the vertical arch of the globular ornaments.<sup>61</sup> In cases where the ball-shaped ornament at the bottom of the jewellery was decorated as described above, the small balls separating the upper and lower arches were adorned likewise.<sup>62</sup>

The design of the crescent-shaped ornament soldered to the inner edge of the lower arch has several variations, as well. There are two major differences. Crescent-shaped ornaments are sometimes pierced,<sup>63</sup> but in most cases, they are not.<sup>64</sup> Generally, this part was also further decorated. In items with openwork, the *lunula* is frequently framed by a beaded wire,<sup>65</sup> which is also found in most of the unperforated items,<sup>66</sup> but less often a plain filigree strand was used.<sup>67</sup> A common decoration is granulation and globular ornaments soldered to the three<sup>68</sup> or two ends of the crescent.<sup>69</sup> Generally, there was one granule soldered to each spherical ornament placed on the tips of the crescent,<sup>70</sup> but sometimes three granules were soldered on the tips in the shape of a pyramid.<sup>71</sup> The inner surface of the crescent-shaped part was occasionally decorated with granulation,<sup>72</sup> and sometimes with a filigree wire.<sup>73</sup>

The locks of the pendants are similar to those of other contemporary earring types: they are sometimes socketed,<sup>74</sup> but in most of the cases they have hook-and-eye catches.<sup>75</sup> At the joint of the lower and upper arches, a conical or regular ball-shaped ornament can be usually seen, the design and decoration of which are generally similar to the globular ornaments on the outer edge of the lower arch. In the case of items with a decorative element imitating a bunch of grapes, the parts between the lower and upper arches were not decorated with such balls of

<sup>58</sup> Table 1. 7, 10–11.

<sup>59</sup> Table 1. 18, 31.

<sup>60</sup> Table 1. 35.

<sup>61</sup> Table 1. 7.

<sup>62</sup> Table 1. 6, 11, 13–14.

<sup>63</sup> Table 1. 17, 19–20, 24. It is worth noting here that the crescent-shaped ornament with openwork decoration appears not only in the case of Type I, but also in Type II (Table 1. 3–4, 8, 13, 32). It cannot be decided from the photograph taken of the object found in Demir Kapija (Aleksova 1970 98, fig. 6. 3) whether the crescent-shaped ornament was originally pierced or the holes in thin metal sheet were caused by corrosion.

<sup>64</sup> Table 1. 5–7, 9–11, 18, 23, 30–31, 33–35.

<sup>65</sup> Table 1. 17, 24.

<sup>66</sup> Table 1. 5–7, 9–11.

<sup>67</sup> Table 1. 19–20, 23, 30. It is worth mentioning the pair of pendants found in grave no. 4 of the Krstevi site in this respect, as well. One of the items is framed with a simple filigree wire, while the other is framed with a twisted one, Maneva 2000 55. See fig. 6. 6–10.

<sup>68</sup> Table 1. 33–34.

<sup>69</sup> Table 1. 6, 10–11, 16–20, 23–24, 30–31, 34–35.

<sup>70</sup> Table 1. 6, 11, 18.

<sup>71</sup> Table 1. 6, 10, 30, 35.

<sup>72</sup> Table 1. 10, 31, 33–35. In some cases, however, the decoration could be seen only on one side or on one of the pieces (Table 1. 10), Jovanović – Vuksanović 1981 Y 245; Tasić 1998 no. 363.

<sup>73</sup> Table 1. 18.

<sup>74</sup> Table 1. 6–7.

<sup>75</sup> Table 1. 5, 9–11, 16–20, 23–24, 30–31, 33–35.

sheet metal. Instead, discs framed with beads were used there.<sup>76</sup> The latter ones were less, while the former ones were more fragile parts of the jewellery. Accordingly, the globular ornaments made of thin sheet metal – like the pieces attached to the lower arches – often remained only in a fragmented form.

Due to their design, the pieces of jewellery could easily become damaged.<sup>77</sup> One of the pieces of jewellery found in grave no. 84 of the cemetery excavated at the site Maticane-Berg was also fragmented: only its lower globular ornament remained of it (*fig. 5. 2*).<sup>78</sup> In the case of the item preserved in the Targovište Museum, on the other hand, the crescent piece cracked (*fig. 6. 6*).<sup>79</sup> The object found in grave no. 4 of the Krstevi cemetery showed traces of contemporary repair following the damage (*fig. 8. 9*).<sup>80</sup> The spheres at the bottom were the elements that broke off most frequently.<sup>81</sup> Less frequently, the crescent-shaped ornament could also get damaged.<sup>82</sup> Nevertheless, fragmentary objects were often used even after this, which can also be considered a common practice in those times.

Finds belonging to Type I were, therefore, discovered throughout the Balkans (*fig. 11*). The westernmost point of the distribution area is Podgrađe,<sup>83</sup> and the use of these items extended to the central part of Greece in the south,<sup>84</sup> and to Dobrudja in the south-east.<sup>85</sup> Croatian and Serbian researchers dated these artefacts between the 9th and 11th centuries,<sup>86</sup> while the fashion of the Bulgarian and Macedonian items is believed to have lasted until the 12th century.<sup>87</sup> In some regions, the fashion of this type of object was more concentrated in some regions, such as Dalmatia, Northern Kosovo, Macedonia, Northern Bulgaria, and the central part of Greek Byzantine territories.<sup>88</sup>

#### 1.4. The characteristics of Type II

The antiquities belonging to Type II were made of silver alloy<sup>89</sup> or bronze.<sup>90</sup> The decorative elements found on the outer edge of the lower arch comprised both conical spheres<sup>91</sup> and

<sup>76</sup> *Table 1. 17, 19–20*. In the case of intact pieces classified as Type I, it can be observed that the objects decorated on the lower arch with a sheet metal sphere or an element resembling a bunch of grapes had such ornaments at the joint of the lower and upper arches that matched the character of the decorative pendant. In other words, if the pendant was a globular ornament, the arches were also separated by globular decorations, and if the pendant was an ornament shaped like a bunch of grapes, the arches were divided by granules soldered together. Based on these – as it can also be observed in the classification set up by Valeri Grigorov – the individual variants of ornaments seem to be distinguishable from each other. In my paper, however, I do not follow this system, because in the case of Type II (*Table 1. 3, 21–22, 25*) it is not possible to differentiate the decorations in this way, *Aleksova 1966* Pl. XXIII. 24. If, in the future, additional data on intact objects can be added to the database available, it will certainly become easier to decide whether there is indeed a tendency suggesting such a system of different decorations.

<sup>77</sup> *Maneva 2000* 55.

<sup>78</sup> *Jovanović – Vuksanović 1981* Y 247.

<sup>79</sup> *Table 1. 30*.

<sup>80</sup> From this, Elica Maneva inferred to a long use of the object, *Maneva 2000* 55.

<sup>81</sup> *Table 1. 5, 7, 16, 33, 35*.

<sup>82</sup> *Table 1. 30, 33*.

<sup>83</sup> *Petrinec 2009* 617.

<sup>84</sup> *Deriziotis – Kougioumtzoglou 2005* 156.

<sup>85</sup> *Dončeva-Petkova – Ninov – Parušev 1999* 100–101.

<sup>86</sup> *Jovanović 1976; Tasić 1998; Petrinec 2009* 254–256; *Bikić 2010* 47.

<sup>87</sup> *Jovanović 1976; Tasić 1998; Petrinec 2009* 254–256; *Bikić 2010* 47.

<sup>88</sup> *Deriziotis – Kougioumtzoglou 2005* 156.

<sup>89</sup> The items from Székesfehérvár and Szeged were also similar. See also *Table 1. 1–4, 14–15*.

<sup>90</sup> *Table 1. 12, 21, 27*.

<sup>91</sup> *Table 1. 27–28*.



ornaments resembling a bunch of grapes.<sup>92</sup> However, some of the decorations were simplified to such an extent that it is difficult to determine what kind of ornament they go back to.<sup>93</sup> There are also some “hybrid” versions, such as the artefact yielded by grave no. 55 in Sten’è-Golem grad, Macedonia,<sup>94</sup> where the elements of the clustered ornament imitating a bunch of grapes are reminiscent of conical spheres (*fig. 9. 5–6*). Based on the crescent-shaped decoration, these finds can be divided into two clearly distinct groups. In some of the finds, this crescent-shaped ornament is well-formed,<sup>95</sup> while in many pieces it is highly simplified.<sup>96</sup> In the case of more carefully formed artefacts, the ornament imitating granulation can also be observed at the points of the crescents.<sup>97</sup> It is worth noting, however, that such imitations can even be observed in the cases of items of poorer quality.<sup>98</sup> The rounded points of the crescent-shaped ornaments on the pieces of jewellery from Székesfehérvár and Szeged (*fig. 1. 1–2, 4–5*) are suggestive of such decorations. The *lunula* has a framed decoration in some cases (*fig. 1. 3*),<sup>99</sup> yet – as it is exemplified by the pair of earrings from Szeged (*fig. 1. 4–5*) – this is not common.

In the case of finds of lower quality, it can be frequently observed that a hole was made in the middle of the crescent-shaped ornament. This hole must be an imitation of the openwork decoration of crescent-shaped ornaments mentioned above in connection with Type I. A better imitation is known from Prahovo (*fig. 9. 7*),<sup>100</sup> a poor-quality analogue was found in Aerino (*fig. 10. 7–8*),<sup>101</sup> and completely schematic versions came from Gomjenica (*fig. 9. 1, 3*) and the territory of present-day Slovenia.<sup>102</sup>

The cylindrical pieces separating the lower and upper arches were generally less carefully finished. In some cases, they are reminiscent of the globular ornaments of items belonging to Type I,<sup>103</sup> but imitations of discs decorated with granulation also exist.<sup>104</sup> Quite often, this decoration is merely signalled (*fig. 1. 1–3*).<sup>105</sup>

The catches of the earrings had both the hook-and-eye<sup>106</sup> and the socketed<sup>107</sup> variants. The latter often appeared merely in an imitated form,<sup>108</sup> and in some cases it was simplified to such

<sup>92</sup> Table 1. 2–4, 8, 12, 14–15, 21.

<sup>93</sup> For example, Table 1. 1, 13, 26.

<sup>94</sup> Bitrakova 1988 208; Maneva 1992 53.

<sup>95</sup> Table 1. 21, 25–29.

<sup>96</sup> Table 1. 1–4, 8, 12–14. The items often referred to as “swallowtail-shaped” pieces in previous scholarly literature also belong here, Szőke 1962 50.

<sup>97</sup> Table 1. 21, 23.

<sup>98</sup> Table 1. 4, 8.

<sup>99</sup> Table 1. 12, 27–28. The two pieces of jewellery discovered in Székesfehérvár also belong here.

<sup>100</sup> M. Janković 1983 99.

<sup>101</sup> Bosselmann-Ruickbie 2011 255.

<sup>102</sup> Jovanović 1976 136; Miletić 1967 101–102.

<sup>103</sup> Table 1. 4, 13, 32.

<sup>104</sup> See also Table 1. 1, 14, 22. The jewellery found in grave no. 55 of the Sten’è-Golem grad site is unique in this respect, as well. In addition to the ornament at the bottom, it has elongated conical elements that are similar to spheres made of sheet metal, but the decoration of their surface imitates granulation, Janković 2007 53.

<sup>105</sup> The finds from Székesfehérvár and Szeged can be considered like this. See also Table 1. 1, 3, 12.

<sup>106</sup> The items from Őthalom and Halimba are like this. See also Table 1. 8, 14, 21, 25, 28, 32.

<sup>107</sup> The jewellery from Gyula and the stray item from Odarci must have been like this, Dončeva-Petkova – Ninov – Parušev 1999 100.

<sup>108</sup> Table 1. 4, 22.

an extent that it was just signalled.<sup>109</sup> In these pieces, a small part was omitted from the casting where the upper and lower arches met<sup>110</sup> imitating thus the place of the former lock (*fig. 1. 1–2*).<sup>111</sup>

It can also be seen in the case of three pendants that balls made of sheet metal typical of Type I were applied where the lower and upper arches met. The sheet metal balls of the stray find from Odarci survived in the best condition (*fig. 9. 9*). Here, the decorations are intact on both sides.<sup>112</sup> In the case of the item from Gyula, the sheet metal ball remained only on one side (*fig. 1. 7*), while the piece discovered at the site Ptuj-Spodnija Hajdina has one half of the sheet metal sphere on the upper arch with a round cross-section (*fig. 9. 1*).<sup>113</sup> This phenomenon is also worth considering because it illustrates well that this archaeological material comprises not only carefully crafted pieces of goldsmith works soldered together from several parts and their imitations cast as one piece. A given type may also contain “hybrid” pieces, some parts of which were cast (such as the ornament on the lower arch of the stray find from Demir Kapija),<sup>114</sup> while other elements were soldered together from several parts (*fig. 6. 1–2*).

Some of the finds in this group were classified as a separate type by Valeri Grigorov.<sup>115</sup> The items belonging to this type are made up of two parts: a bored-through casting holding ornaments along its central vertical axis as well as a piece of wire threaded through the hole of the casting.<sup>116</sup> The crescent-shaped ornament with a pendant discovered in Northern Bulgaria certainly belonged to such an item (*fig. 10. 4*).<sup>117</sup> The central ornament itself was rough-and-ready in terms of its finishing, and in the case of a pair of jewellery found in Dolni Lukovit, it also occurred that the crescent-shaped ornament itself was made of a thin metal strand. The cylindrical segments where the lower and upper arches met were merely signalled in the case of these pieces. The small decorative elements joined to the elongated globular ornament formed at the bottom of the artefacts were similar in design. The pieces found in Dolni Lukovit were open (*fig. 10. 3*), and only the pointed part of the upper arch was indicative of the way of wearing,<sup>118</sup> while the piece of jewellery discovered in Kragulevo had a hook-and-eye catch (*fig. 10. 5*).

The area of distribution of artefacts classified as Type II was fundamentally the same as that of finds belonging to Type I (*fig. 11*). It was perhaps only the northern part of their distribution area that showed a major difference. While Type I appears in the early (9th-century) archaeological material of Dalmatia, Type II is completely unknown there. In contrast, in Slavonia and the southern part of the Great Hungarian Plain, the cast finds are present, all of which can be dated to the 10th to the 11th centuries. The earliest finds of Type II emerged in the southern (Bulgarian) areas<sup>119</sup> at the end of the 9th century, but they became widespread in the 10th century<sup>120</sup> and their

<sup>109</sup> *Table 1. 12, 22.*

<sup>110</sup> The fact that this part was not cut out later, but was originally cast in this way could be observed well in the pieces of jewellery from Székesfehérvár.

<sup>111</sup> These pieces could be worn as earrings, or if they were to be used as pendants, they had to be stitched to the headdress because the cut upper arch could have fallen off a loop relatively easily.

<sup>112</sup> *Dončeva-Petkova – Ninov – Parušev 1999 100–101.*

<sup>113</sup> Unfortunately, it is not possible to tell whether this is a secondary decoration or the lower and upper arches were originally separated by such elements. Consequently, it cannot be decided either, whether the piece of jewellery originally had a socketed catch (and this was removed when the sphere of metal sheet broke off) or this part was formed from the beginnings by cutting the pendant where the upper and lower arches met.

<sup>114</sup> *Aleksova 1970 98.*

<sup>115</sup> In Grigorov’s classification: Type VI.1 (*fig. 12. 3*), *Grigorov 2007 40.*

<sup>116</sup> *Table 1. 22, 25.*

<sup>117</sup> *Grigorov 2007 40.*

<sup>118</sup> *Važarova 1976 210.*

<sup>119</sup> *Grigorov 2007 40.*

<sup>120</sup> *Miletić 1967 116.*

fashion lasted until the 11th century.<sup>121</sup> Apparently, this “hey-day” of more than one century resulted in their appearance within the political boundaries of the Hungarian Principality, where these pieces of jewellery can be mainly dated to the 10th century. However, neither in the Balkans nor in the Carpathian Basin was their fashion so widespread and long-lasting as the use of earrings with bunches of grapes or pendants with four spheres, which also explains their limited occurrence.

When reviewing the inter-relationships of the discovered finds, it is also worth mentioning that just as the items of Type I discovered in Greece or Croatia belonged more closely together,<sup>122</sup> the pieces of Type II found in Slovenia also formed a distinct group.<sup>123</sup> In the case of the latter, it can be clearly seen that the design of the objects is very similar, while their analogues mainly appear among artefacts found in Bosnia, and the item from Himód is closely related to these, as well. The site of Gomjenica also bears considerable relevance to the finds from Székesfehérvár and Szeged, as the pendant discovered in grave no. 21 is still regarded as the closest parallel to the aforementioned artefacts (*fig. 10. 1*).<sup>124</sup> Unfortunately, in connection with the object from Gyula, we could not find such a close parallel as the pendant from Gomjenica. However, a somewhat more distant connection can be demonstrated between this item and the find from Odarci (*fig. 1. 7, fig. 9. 9*).<sup>125</sup>

#### 1.5. A comprehensive evaluation of the artefact type

Based on the classification above, it can be concluded that the object type emerged in the 9th century. The pieces belonging to Type I appeared earlier. The simpler, cast variants belonging to Type II spread over a wider area than the former and met the requirements of easier production. However, the emergence of the latter did not mean the end of those pieces that required a much longer time of production,<sup>126</sup> they could exist parallelly in the broader region of the Balkans.

It was proposed earlier that the finds from Brno and Stará Kouřim (*fig. 10. 9–10*) may have been the antecedents of the jewellery Type In terms of design.<sup>127</sup> However, this idea has already been refuted by Vojislav Jovanović and Károly Mesterházy.<sup>128</sup> Their existence, on the other hand, certainly highlights what Mechtilde Schulze-Dörrlamm has recently pointed out concerning other types of contemporary jewellery.<sup>129</sup> Northern items imitating pendants from the Balkans may partly suggest that the 9th-century form of the object type was known in this area, as well. In contrast to the southern occurrence of crescent-shaped earrings with a wavy inner arch, none (or only a very small number) of this type of jewellery reached these northern areas either from Byzantium or the neighbouring regions of the Balkans. Furthermore, the design of the Czech

<sup>121</sup> Jovanović 1996 94; Mikulčić 1996 143; Bitenec – Knific 2001 116. The site Svete Gore in Slovenia can also be dated to the 11th century, Korošec – Korošec 1973 133–134. The dating of the finds discovered in Aerino to the 12th century is not confirmed by the data available, *Cat. Athens 2002* 585; Bosselman-Ruickbie 2011 255.

<sup>122</sup> Petrinec 2009 254–256.

<sup>123</sup> That is also the reason why Maja Petrinec considers the cast finds to be local products made in nearby workshops, *Petrinec 2003* 533.

<sup>124</sup> Miletić 1967 85; Mesterházy 1990 107.

<sup>125</sup> Dončeva-Petkova – Ninov – Parušev 1999 100.

<sup>126</sup> Petrinec 2003 533.

<sup>127</sup> Dostál 1965 386–387; Šolle 1966 159, 272; Jovanović 1976 135; *Cat. Brno 2014* 402. The interesting thing about the two objects is that, based on the ornaments hanging from the lower arch, one of the pendants goes back to those items that were decorated with a ball made of sheet metal (*fig. 10. 9*), while the other has a decorative element that evolved from the bunch of grapes (*fig. 10. 10*).

<sup>128</sup> For the dating of the pieces of jewellery discovered in grave no. 139 of the Stará Kouřim cemetery, see Šolle 1966 159. On parallels for the decorative pendant of the Brno earring, Dostál 1966 35–38.

<sup>129</sup> Schulze-Dörrlamm 2020.

finds also sheds light on that these objects (apparently, the pendants composed of several pieces belonging to Type I) were re-imagined and re-created according to Moravian jewellery-making practices in the north.

The development and antecedents of the object have been highlighted by finds recently discovered in Greece. The crescent-shaped decoration that belonged to the objects discovered in Agia Triada and Azoros was widespread in the Middle Byzantine period (*fig. 8. 10–15*).<sup>130</sup> Their shape goes back to examples that spread from Byzantium to the steppe areas (*fig. 13. 1*),<sup>131</sup> while also being the forerunner of several other types of jewellery.<sup>132</sup> It can be concluded, therefore, that the type of object explored by us probably evolved from crescent-shaped pendants made of sheet metal in Byzantium. Subsequently, it became popular in the wider areas of the Balkans, too. After its 9th-century emergence, it spread as far as Dalmatia. In the Balkans, the pieces made of sheet metal – based on their raw material (silver) and the expertise needed to produce them – must have been the jewellery of noble families.<sup>133</sup>

The type of object later remained in use until the 11th century, and, despite the fact that some of the cast versions had rather crude finishing, it retained its characteristic elements of design to the end. It can also be clearly observed that due to the limited fashion of the object type, only one piece of jewellery of extraordinary beauty – of unknown provenance – is known, and even that was made of silver (*fig. 8. 8–9*). The fine decorative elements of this item and the technical solutions typical of Byzantine jewellery-making equally suggest that its most artistic parts must have been made by artisans working there.<sup>134</sup> I could not find any similar object among the pieces of gold jewellery that influenced the taste of the age and determined the wear of the elite. Examples of the object type that were simpler in design yet associated with workshops and masters of greater expertise in terms of their production were present in many parts of the Balkans. In the mountainous region of Macedonia, to the north of Hellas, there were already items where the lower arch of the pendants was replaced by an ornament resembling a bunch of grapes (instead of a sphere made of sheet metal) in the 10th century. This type of decoration cannot be traced further to the south, but in the northern parts of the Balkans, where such pieces of jewellery decorated with a bunch of grapes were widespread, it enjoyed similar popularity as the variants decorated with a sphere. In the northern regions, however, there was no longer a demand (or opportunity) for jewellery to be made of multiple pieces (Type I). Thus, the simpler, cast versions also became widespread. Sometimes these were only pale imitations of the truly outstanding pieces.<sup>135</sup>

The pieces that reached the Carpathian Basin attest that the jewellery had no pervasive fashion. Although only cast items classified as Type II have been found at the sites so far, the finds from Székesfehérvár and Szeged can be regarded as good-quality specimens. It is also noticeable that these pieces of jewellery are not directly related to the Slovenian items described and distinguished

<sup>130</sup> *Malenko 1976 223; Kougioumtzoglou 2002 435; Katsarova 2002 219.*

<sup>131</sup> Attila Türk called my attention to one of the foreshadows discovered along the Dnieper. Hereby, I would like to thank his help.

<sup>132</sup> The pendants discovered in grave no. 8 of the site Petroševci in Bosnia are such unique finds, *Žeravica 1986 133, 176–177.*

<sup>133</sup> *Petrinec 2003 533.*

<sup>134</sup> On the question of the workshop, see *Petrinec 2003 533.*

<sup>135</sup> In this respect, it is perhaps enough to refer only to the finds discovered in grave no. 161 of the Gornjenica cemetery, at Kragulevo, and in Novograd.

above. They are in a closer relationship with the Gomjenica piece (*fig. 10. 1*).<sup>136</sup> The find from Himód, on the other hand, can be associated well with the Slovenian group (*fig. 9. 1, 3, fig. 10. 2*).<sup>137</sup>

There is little information about the chronology of these memories and the position of the bodies buried together with such pieces of jewellery. From this point of view, the finds from Szeged and Himód can be described the best, as in these cases well-observed, archaeologically interpretable find contexts are available, even if was not possible to record everything during the excavation.<sup>138</sup> In the case of the Székesfehérvár grave, there are at least data about the other finds discovered in the grave. However, we do not have any further information about the position of the individual artefacts inside the grave or the location of the burial within the cemetery.<sup>139</sup> Unfortunately, we have even less information concerning the Gyula cemetery. The piece of jewellery found there cannot be connected to any archaeological context or even a grave.<sup>140</sup>

Based on the preliminary reports, the Himód cemetery part was in use from the ninth to the 11th century.<sup>141</sup> As the site could not be fully excavated, it is not possible to determine whether the cemetery was continuously used (perhaps by a community living there from the 9th century onwards) or there was only site continuity. The burial in question was located in the 10th/11th-century part of the cemetery by researchers who conducted the excavation.<sup>142</sup> Furthermore, based on a neck-ring, they assumed that it is more likely to be dated to the 11th century.<sup>143</sup>

The burials of the Öthalom cemetery can be dated to the 10th century. The earliest date of the cemetery is given by the coin of Berengar I discovered in grave no. 4/1950. The date of royal coin minted in Pavia sometime between 888 and 915 has not been further specified by numismatists (probably due to the uniqueness of this type of coin). Therefore, the year 915 must be regarded as the *terminus post quem*. The cemetery was still used in the middle third of the 10th century and perhaps even later.<sup>144</sup> This is suggested by a pair of trapezoidal shouldered stirrups yielded by grave no. 9/1950. This type of artefact is an important chronological clue when dating 10th-century burials in the Carpathian Basin.<sup>145</sup> The cemetery part yielded no artefacts (S-terminalled lockrings, Árpáadian-age coins) that would have testified to the continuation of burials into the late 10th or 11th century.<sup>146</sup> It is, therefore, not possible to provide more exact dating within the given period. In addition to the grave, the cemetery part also points to that the people buried there could not have been well-to-do in their lifetime, either. Horse remains were unearthed only from two richer burials (grave no. 4/1950 and 9/1950). Furthermore, next to the grave that contained

<sup>136</sup> In my view, this finding also proves that contrary to the suggestion made by Željko Tomičić (*Tomičić 1992*) – to be discussed later in my study – the comparison of the pieces of jewellery discovered in Slovenia and the Carpathian Basin does not allow us to arrive at such conclusions that the Croatian researcher’s suggestion (namely that such pieces of jewellery found in the two areas are connected) points to. The types of jewellery coming from both areas (the Eastern Alps and the Carpathian Basin) point in the direction of the Gomjenica site, as their southernmost “close parallels” appear there.

<sup>137</sup> *Ungerma 2016* 30–31.

<sup>138</sup> *Bálint 1968* 54. For the reasons, also *Szalontai 2016* 691.

<sup>139</sup> *Bakay 1966* 45.

<sup>140</sup> For the circumstances of the discovery, *Medgyesi 2015* 70.

<sup>141</sup> *Egry – Tomka 2000; Tomka 2010*.

<sup>142</sup> *Egry – Tomka 2000* 148; *Tomka 2010* 200–203.

<sup>143</sup> *Tomka 2010* 200, n. 7.

<sup>144</sup> *Bálint 1968* 56; *Kovács 1989* 61; *Coupland – Gianazza 2015* 318. The latter work erroneously named the year 1859 as the date of the discovery. The mistake stems from the typographical error at *Kovács 1989* 61, where the 1879 excavation conducted by Gusztáv Varázsjéi was published with the date 1859. The coin, however, was not discovered in 1879, but in 1950. László Kovács referred to the 19th-century excavation because, after *Bálint 1968*, he considered the two cemetery fragments to be the same site.

<sup>145</sup> *Kovács 1986a; Kovács 1986b; Révész 1996* 45–46.

<sup>146</sup> For the chronology of their appearance in the region, *Révész 2020* 420–421.

the piece of jewellery studied by us, there was another female burial with several grave goods including a bronze bracelet and bronze mount fragments (grave no. 5/1950).<sup>147</sup> All this paint a poorer picture of this community than the burials excavated in 1879 and 2009.

Based on the unearthed artefacts, the Székesfehérvár cemetery can be dated to the second half of the 10th century. Despite some assumptions that the cemetery was probably opened in the late 9th century, researchers have accepted the inferences made by Kornél Bakay that the use of the cemetery started in the second half of the 10th century. Recent investigations have only modified the *terminus ante quem* of the cemetery to the extent that its use probably did not end in the 1020s but the late 10th century. Among the graves of the community buried here, some were much richer than the burial containing the earring (e.g., graves no. 5–6 and grave no. 33), but there were also burials poorer in furnishings. Overall, the investigated grave from Fehérvár also belongs to less rich burials. The piece of jewellery discovered there can presumably be dated to the second half of the 10th century.

Due to its being a stray find, the artefact discovered in the Gyula cemetery cannot be evaluated precisely. The large number of grave goods found in the cemetery suggest that the burials must have begun in the 10th century and continued up to the 12th century.<sup>148</sup> Based on the fact that the piece of jewellery in question was made of bronze and several manufacturing defects are listed in its archaeological description, this object may not have belonged to a rich grave (like those that contained gilded silver braid ornaments and gilded silver fittings) but to one of the poorer burials.

Based on the above, this type of jewellery<sup>149</sup> came to the Carpathian Basin in the 10th century (probably in the second half of it). However, the fashion of the object type was by no means common. The three sites located at a great distance from one another also suggest that these pieces reached the northern areas at random. In most cases, their appearance here cannot be considered a strong Byzantine or Balkanic influence, as neither the Szeged nor the Székesfehérvár site yielded other pieces of jewellery that could be associated with these regions. In contrast, the Gyula cemetery is somewhat different, as several other objects with southern analogues came to light there.<sup>150</sup>

In relation to the distribution of the type of jewellery in the Carpathian Basin, it is necessary to briefly discuss the findings made by Jochen Giesler and later by Željko Tomičić. As mentioned in the overview of the history of research above, the German researcher regarded this object type as a kind of jewellery characteristic of the “Bijelo Brdo culture” that he considered being distinguishable (*fig. 12. 1*). The Croatian researcher was of the same opinion, with the difference that he sub-divided Giesler’s typology. He divided the pieces decorated with crescents on their inner arch into two sub-types – considering them representative finds of the “culture” in question.<sup>151</sup> In contrast, after the 1959 study by Béla Szőke, Hungarian researchers rejected the concept of “Bijelo Brdo culture” for several reasons<sup>152</sup> – as Jochen Giesler referred to it himself. Consequently, they were not able to relate to the analysis of culture offered by Giesler and his followers in this sense, either.<sup>153</sup> The reason for this can only partly be explained by the problems related to ethnic approach also recognised by the German researcher. The study written by Béla Szőke – published,

<sup>147</sup> *Bálint 1968*. For their more recent assessment, *Révész 2020 379, 411*.

<sup>148</sup> *Szatmári 1995 223–225; Medgyesi 2015 72; Révész 2020 132*.

<sup>149</sup> *Petrinec 2003 532*.

<sup>150</sup> *Szatmári 1995 223–225; Medgyesi 2015 75, 83, 88, 91*.

<sup>151</sup> *Tomičić 1992 114, 116, 122*. In light of the other types of jewellery presented by Károly Mesterházy, the division made by the Croatian researcher is even less justifiable, *Mesterházy 1990; Mesterházy 1991*. Researchers are of the unanimous opinion that the finds with a crescent-shaped ornament held by Željko Tomičić as different types can, in fact, be classified in the same group, *Grigorov 2007 40*.

<sup>152</sup> *Giesler 1981 13–14*.

<sup>153</sup> *Mesterházy 1984; Fodor 1984; Kovács 1985; Bóna 1986 576*. For a recent review of Jochen Giesler’s work with a different viewpoint, *Révész 2020 11*.

unfortunately, only in Hungarian – was based on a much more complex line of arguments.<sup>154</sup> It demonstrated why we cannot identify as a separate cultural unit those rural cemeteries that had been differentiated under the aforementioned name in the scholarly literature of the period for a long time.<sup>155</sup> Following Béla Szőke's argumentation, it became evident to professionals reading and using his work that no such "culture" existed.<sup>156</sup> Probably because this important paper was published only in Hungarian and foreign researchers were able to read only a brief summary of it, the logical reasoning employed by Szőke did not gain ground in the wider international research.

The interpretation of this type of object as being a characteristic find of the "Bijelo Brdo culture" can be easily refuted if we consider the discovered items. In this aspect, only those pieces of jewellery can be taken into account that were found in Slovenia and the Carpathian Basin, as the Dalmatian finds were not formerly listed here, and Željko Tomičić did not involve them, either.<sup>157</sup> The pieces discovered in Slovenia were not regarded as belonging here in earlier research, either, because they were associated with the "Köttlach culture".<sup>158</sup> However, the more recent analyses have demonstrated that this cultural unit described with archaeological finds was also different from what was previously believed.<sup>159</sup> Regardless of this, it can be said that neither former nor more recent scholarly research has ever considered the 9th–11th-century archaeological find horizon of the Eastern Alpine region to have been identical with the 10th–11th-century material of the Carpathian Basin,<sup>160</sup> and it was not believed to have belonged to the "Bijelo Brdo culture", either.<sup>161</sup> It is, therefore, worth taking another look at the proposition expressed by Tomičić, who divided the artefacts decorated with a crescent-shaped ornament into two sub-types (15a, 15e) of Type 15 distinguished by him (*fig. 12. 2*). How can these finds be considered in any way as objects that are typical of the 10th–11th-century archaeological material of Slavonia, Transdanubia, Syrmia, the Great Hungarian Plain, and Upper Hungary at all? This is particularly problematic from the aspect that we know about a total of six finds representing Sub-Type 15e that were found at four sites. Furthermore, the items belonging to Sub-Type 15e are known only from Slovenia and the Eastern Alpine region (which areas, as I have already mentioned, are normally not associated with this group of finds).<sup>162</sup> To what extent can we regard a type of jewellery as a representative example to separate an archaeological culture within the 10th–11th-century material of the Carpathian Basin that is less common in the area in question than the similar items in the only contemporary cemetery in Macedonia?<sup>163</sup> Of course, the same stands for the other sub-types described by the Croatian specialist under Type 15. Among the 10th–11th-century archaeological finds of the Carpathian Basin, I could identify a total of nine specimens belonging to Sub-Type 15b (from five or six sites),<sup>164</sup> thirteen specimens belonging to Sub-Type 15c (from seven sites),<sup>165</sup> but I did not manage to discover a single item from Sub-Types 15d–e. What kind of "culture" is it that has no more than 30 items of its most characteristic types of jewellery found in all of the extended cemeteries (often comprising hundreds or thousands of burials) associated with it?

<sup>154</sup> Szőke 1959.

<sup>155</sup> For an overview of the research history, Langó 2005.

<sup>156</sup> Bóna 1986 576.

<sup>157</sup> Tomičić 1992 123.

<sup>158</sup> Korošec 1979; Giesler 1980; Giesler 1981.

<sup>159</sup> Kramer 1994 28–32; Nowotny 2005 230–235; Eichert 2010 156–175; Horváth 2014 357–412; Ungerma 2016.

<sup>160</sup> Giesler 1981; Eichert 2010; Horváth 2014 357–412.

<sup>161</sup> Giesler 1980; Giesler 1981.

<sup>162</sup> Table 1. 1–4.

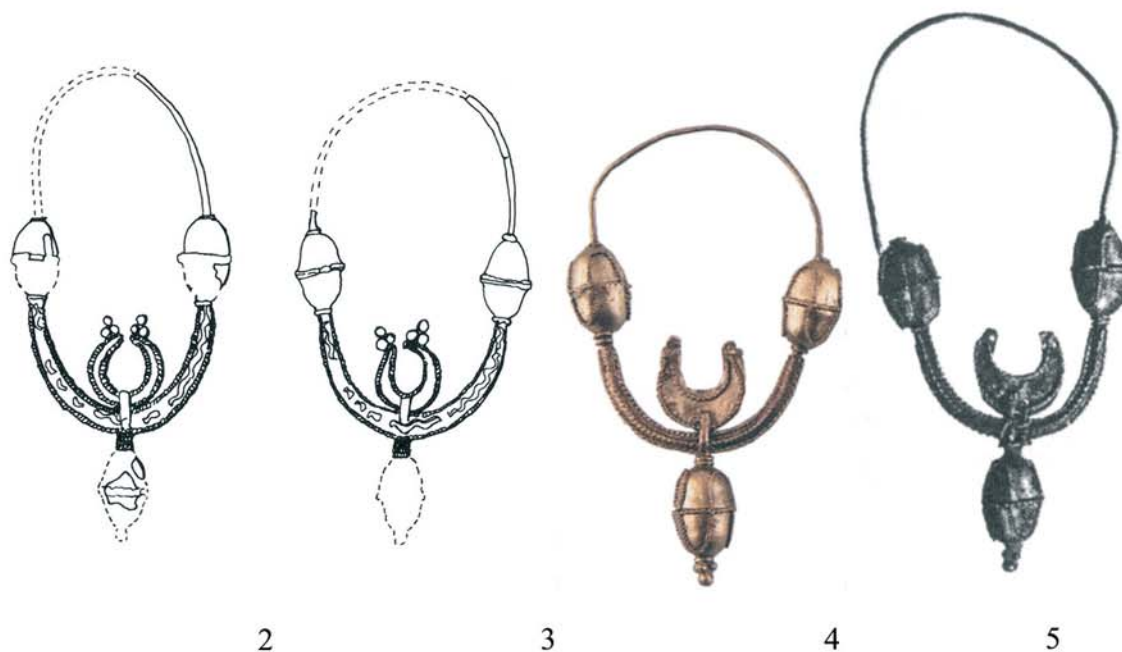
<sup>163</sup> Table 1. 18–20; Maneva 2000 55.

<sup>164</sup> For the analysis of the object type, Chapter 2 of this paper.

<sup>165</sup> Langó 2012.



1



2

3

4

5

Fig. 4. Pendants and earrings decorated with a crescent on their inner arch.  
 1. Biskupija-Crkvina; 2–3. Gata-Cemetery around the St. Cyprian's Church; 4–5. Podgrađe  
 (Photographs and drawings after *Petrinec 2009*)



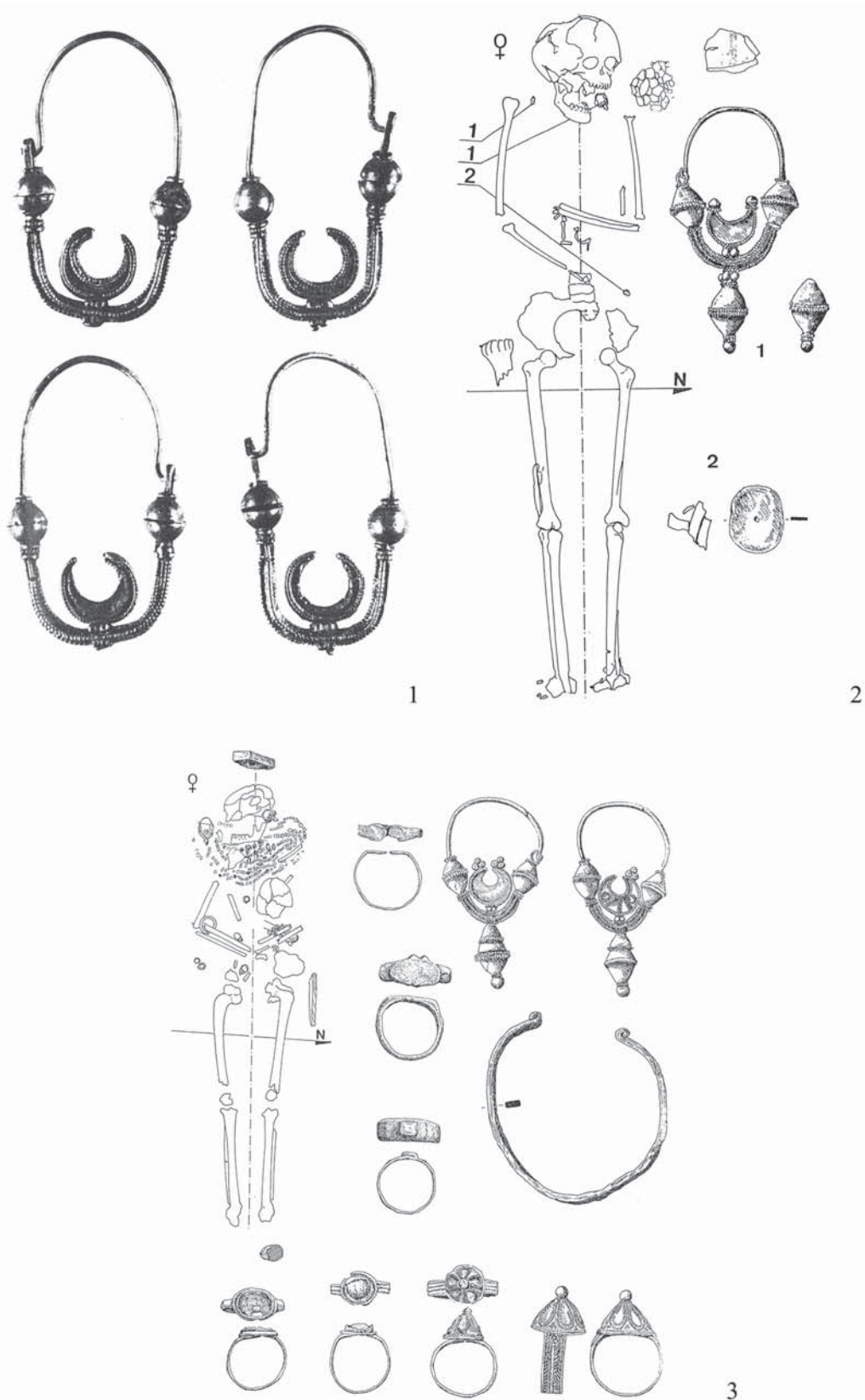


Fig. 5. Pendants and earrings decorated with a crescent on their inner arch.  
 1. Mount Čečan; 2. Matičane-Berg, Grave 84 with grave finds;  
 3. Matičane-Berg, Grave 46 with grave finds  
 (Photograph after *Jovanović 1976*; drawings after *Jovanović – Vuksanović 1981*)



Fig. 6. Pendants and earrings decorated with a crescent on their inner arch.

1–3. Demir Kapija; 4–5. Negotin; 6–10. Krstevi, Grave 4;

8. location of the pendants and further finds in the grave 4

(1–2, 4–5. after *Maneva 1992*; 3. after *Aleksova 1970*; 6–10. after *Maneva 2000*)

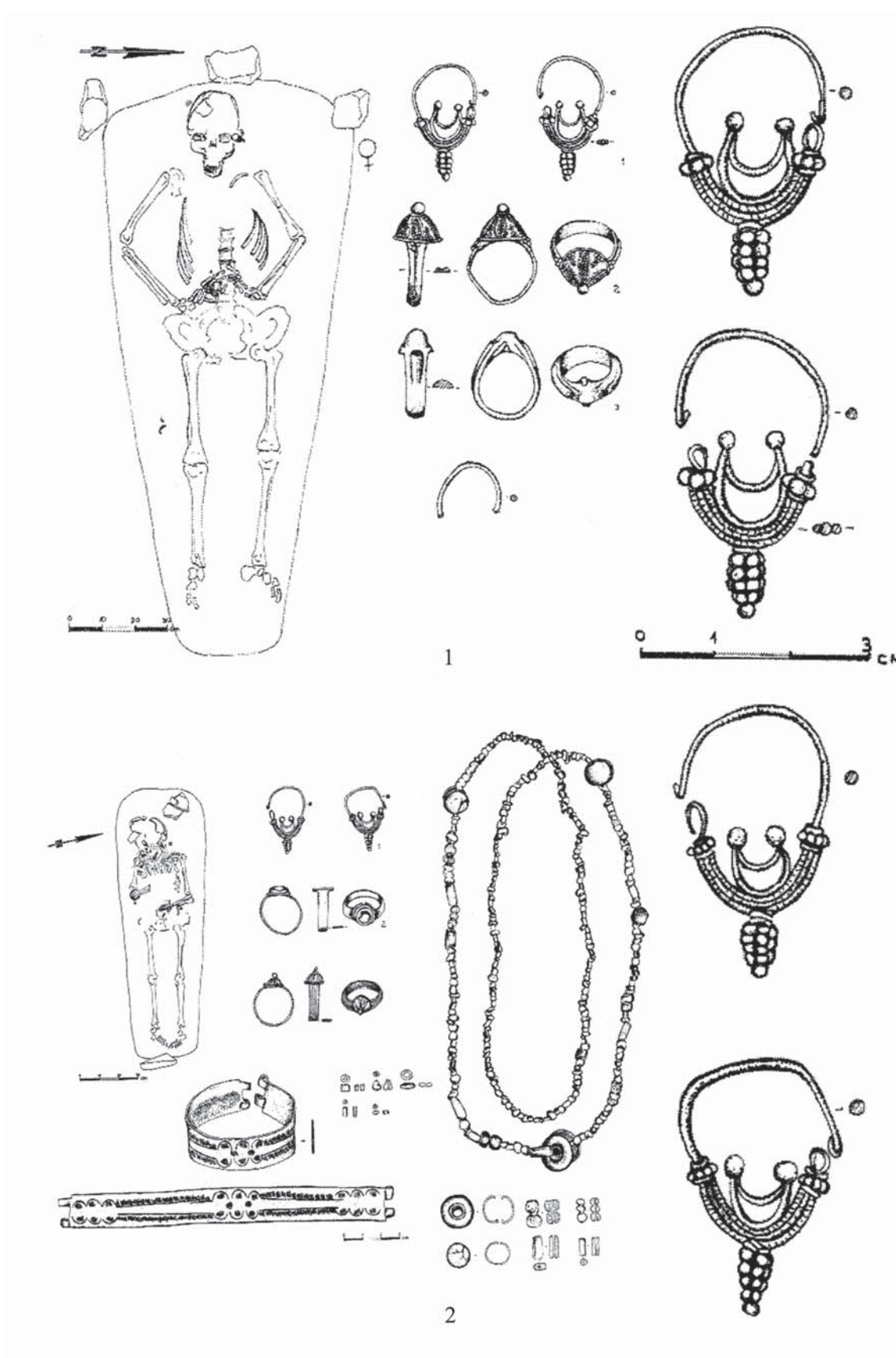


Fig. 7. Pendants and earrings decorated with a crescent on their inner arch.  
1. Krstevi, Grave 9; 2. Krstevi, Grave 17 (after Maneva 2000)



Fig. 8. Pendants and earrings decorated with a crescent on their inner arch.  
 1–2. Kavarna-Vasil Levski ul. 17, excavated area in the cemetery; 3–4. stray finds from the region Targoviste; 5. Kaliakra; 6–7. stray finds from Bulgaria; 8–9. stray finds from unknown sites; 10–11. Agia Triada; 12–15. Azoros (1–2. after *Grigorov 2007*; 3–4. after *Zhecheva n. d.*; 5. Photograph: ©Péter Langó; 6–7. after *Kapelkova 2006*; 8–9. after *Sternberger 1994*; 10–15. after *Deriziotis – Kougioumtzoglou 2005*)

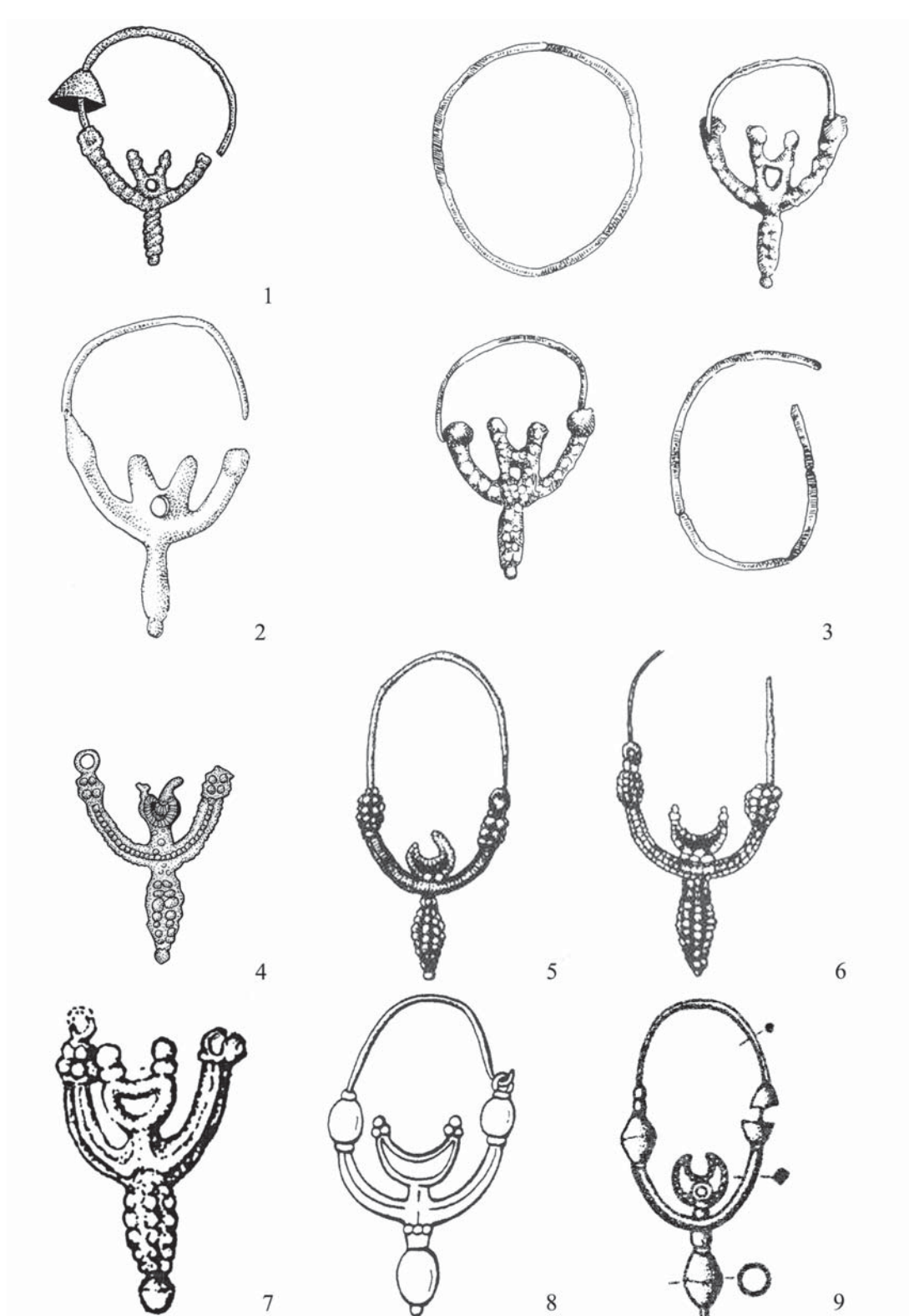


Fig. 9. Pendants and earrings decorated with a crescent on their inner arch.

1. Ptuj-Spodnja Hajdina, Grave 2; 2. Gomjenica-Baltine, Grave 161;  
 3. Svete Gore nad Bizeljsko, Grave 15 with lockrings; 4. Bitola, Grave 52;  
 5–6. Sten'e-Golem grad-Prespa, Grave 55; 7. Prahovo; 8. Zlati dol; 9. Odarci  
 (1, 4. Drawings: ©Zsóka Varga; 2. after *Miletić 1967*; 3. after *Korošec – Korošec 1973*;  
 5–6. after *Maneva 1992*; 7. after *Janković 1983*; 8. after *Grigorov 2007*;  
 9. after *Dončeva – Petkova – Parušev 1999*)

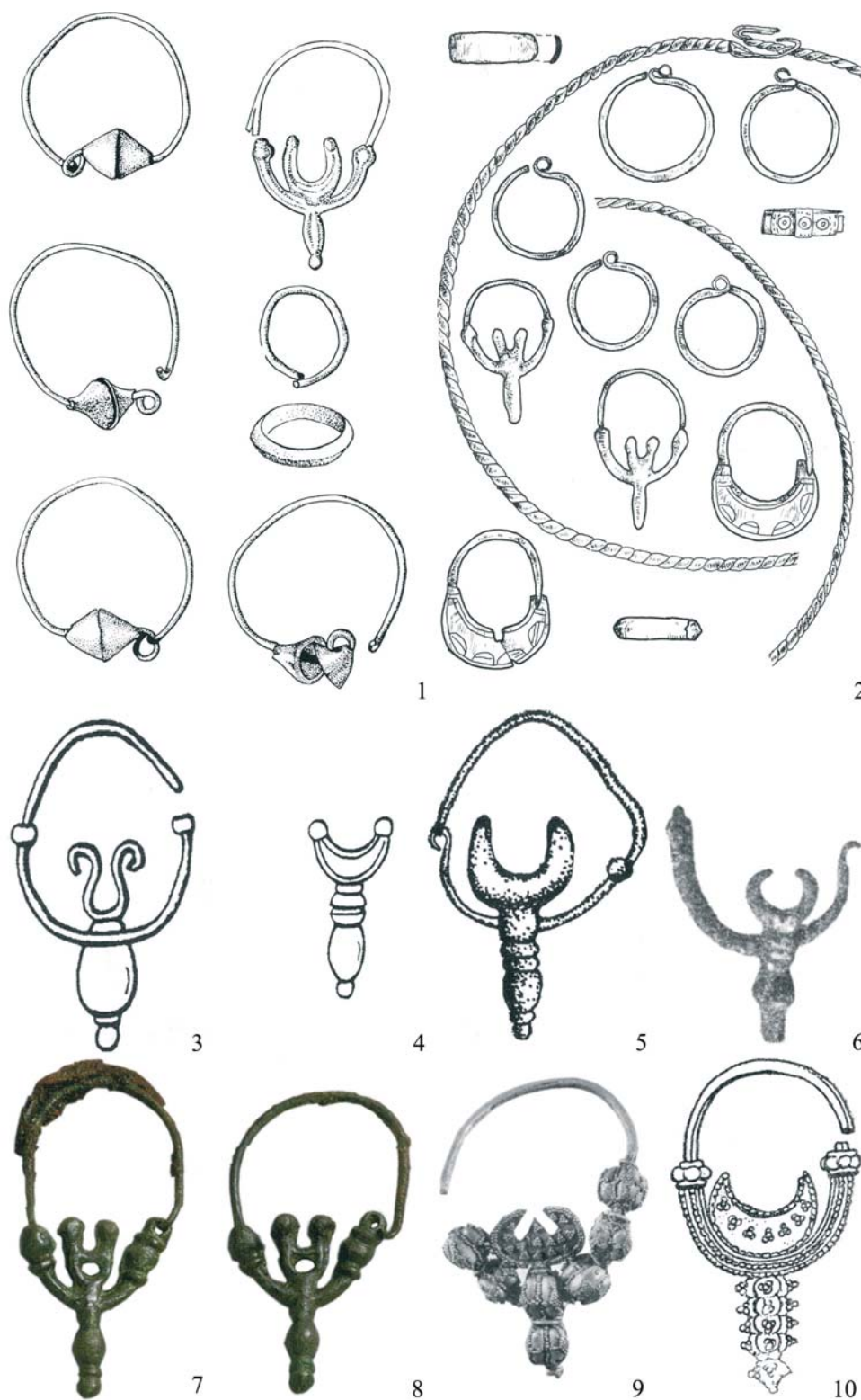


Fig. 10. Pendants and earrings decorated with a crescent on their inner arch. 1. Gomjenica-Baltine Bare, Grave 21, with further jewellery from the grave; 2. Ptuj-Grad, Grave 104, with further grave finds; 3. Dolni Lukovit, Grave 85; 4. Stray finds from Northern Bulgaria; 5. Kragulevo, Grave 26; 6. Novgrad-Iridiol-Kriveblato; 7–8. Aerino; 9. The parallel from Stará Kouřim cited by B. Dostál; 10. The parallel from Brno-Líšen cited by B. Dostál (1. after *Jovanović – Vuksanović – Berič 1972*; 2. after *Korošec 1999*; 3–4. after *Grigorov 2007*; 5. after *Bobčeva 1984*; 6. after *Hensel 1961*; 7–8. after *Bosselman-Ruickbie 2011*; 9. after *Solle 1966*; 10. after *Dostál 1965*)

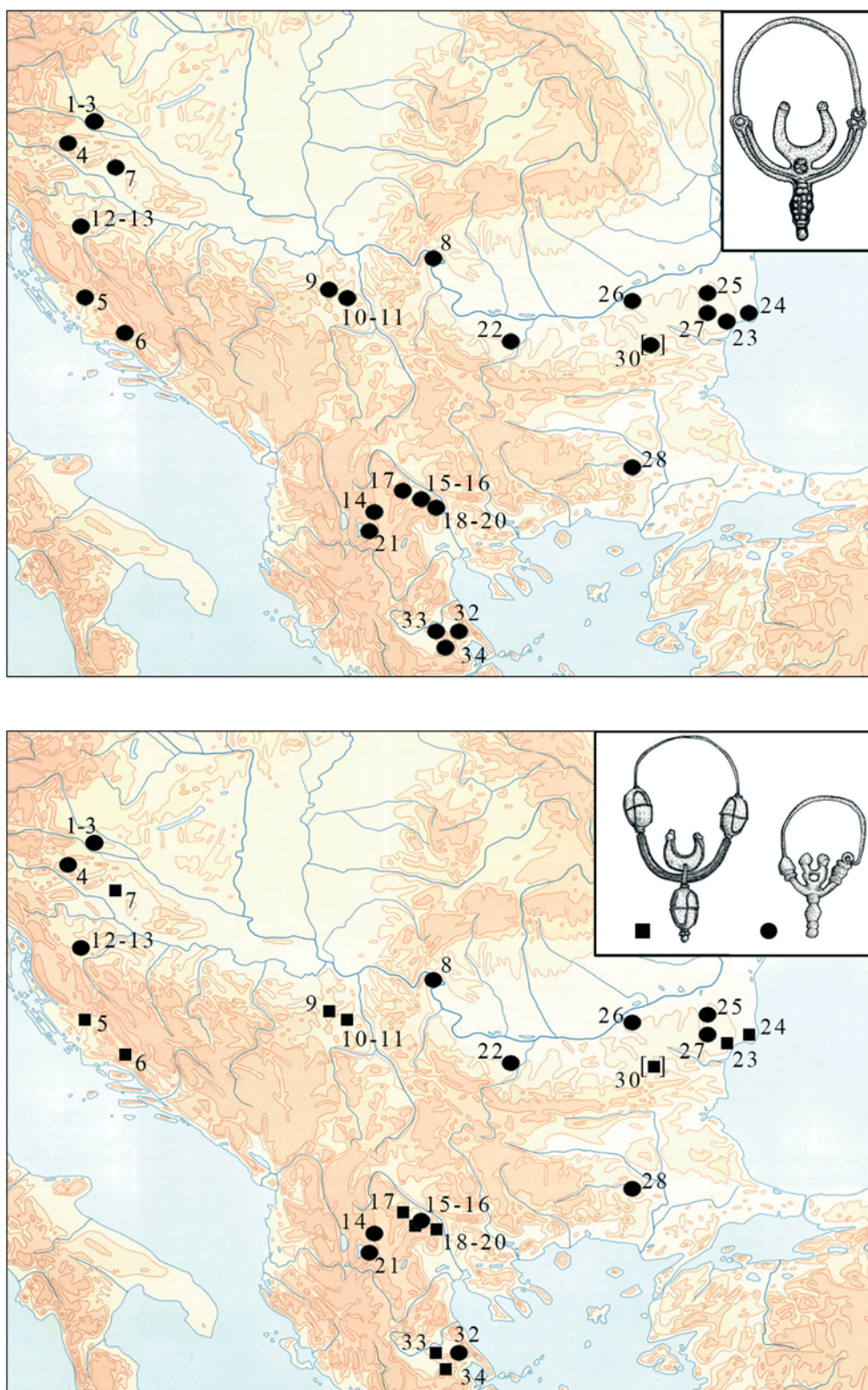


Fig. 11. Distribution of the pendants and earrings decorated with a crescent on their inner arch found outside the Carpathian Basin, for numbers see *Table 1*, rectangle: Type I; circle: Type II (Map: ©Péter Langó)

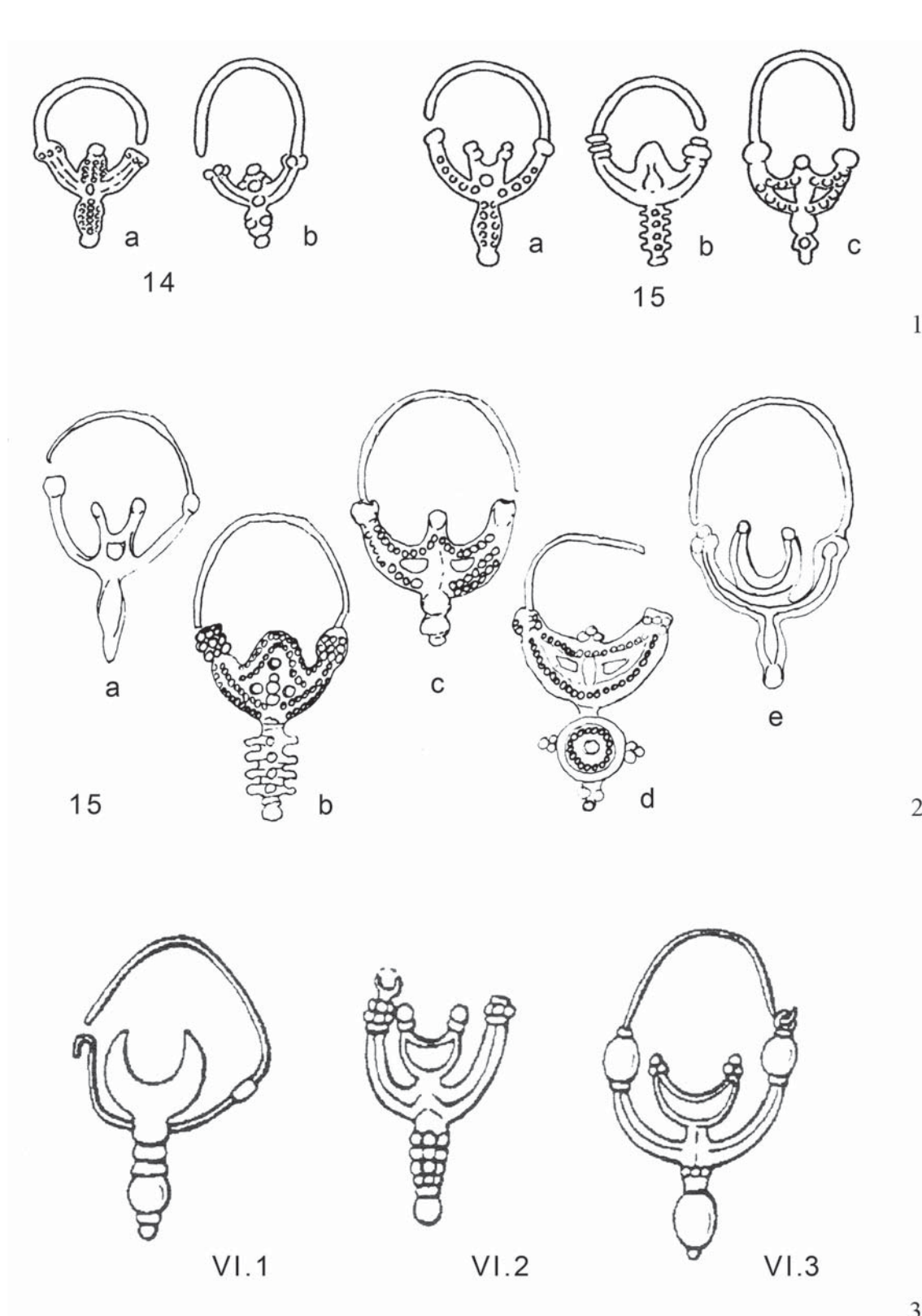


Fig. 12. Classification of the types discussed in the study.  
 1. by J. Giesler; 2. by Ž. Tomičić; 3. by V. Grigorov  
 (1. after Giesler 1981; 2. after Tomičić 1992; 3. after Grigorov 2007)



*2. Crescent-shaped earrings with a wavy inner plate  
and a four-pronged (“pine-cone-shaped”) pendant*

*2.1. Items from the Carpathian Basin*

For a long time, this type of find was more peripheral to research in Hungary, even compared to finds with a crescent-shaped decoration presented in the previous chapter. Béla Szőke briefly referred to them because – although he could not mention any piece connected to the Carpathian Basin when writing his work – he had information about such a piece from one of the cemeteries in Ptuj that was closely connected to the 10th-century find horizon of the Carpathian Basin.<sup>166</sup> The first (and for a long time the only) object to be classified here was a piece of jewellery discovered in the cemetery of Halimba dated between the 10th and 12th centuries (*fig. 13. 2–3*).<sup>167</sup> However, the development of this type of jewellery is much more controversial than that of the finds decorated with a crescent moon. The starting point, in this debate, was the work by Bořivoj Dostál mentioned above.<sup>168</sup> Jochen Giesler, followed by Károly Mesterházy, responded to it disputing the view of the Moravian researcher that these pieces were of Moravian origins.<sup>169</sup> In Hungarian research, the definition of this type of jewellery was also coined by Mesterházy, who – relying on the description given by Béla Szőke – separated it from similar types by the term “crescent-shaped earrings with a wavy inner arch and a four-pronged pendant”.<sup>170</sup> The latter specialist was able to expand the database of finds from the Carpathian Basin with a piece discovered in South Baranya, and he also referred to several finds found in Vojvodina. The publication of finds by Željko Tomičić comprised several further items from South Baranya. Additionally, one more find was discovered in the southern part of the Great Hungarian Plain (*fig. 15*).

As with the group of finds above, before the classification of this type, it is worth again describing those 10th- and 11th-century items found in the Carpathian Basin that I was able to study in detail. Afterwards, I will briefly present those published finds that I could not subject to similar scrutiny, but which belong to the same geographical and chronological context.

Halimba-Cseres (Veszprém county), grave no. 859. The site, excavated between 1952 and 1954, yielded one of the earliest village cemeteries comprising a large number of early Árpáadian-period graves archaeologically recorded and published so far.<sup>171</sup> The cemetery is fully excavated, but a significant part of the graves have been destroyed without being recorded due to the establishment of a bauxite mine and a railway investment associated with that.<sup>172</sup> Based on the 932 rescued burials, despite missing data about them,<sup>173</sup> it is possible to reconstruct the former structure and internal dynamics of the cemetery.<sup>174</sup>

The burial containing the examined jewellery was associated with an early phase of the cemetery by Gyula Török, who excavated it. The dating was supported by other finds discovered in the grave, as well.<sup>175</sup> In addition to the jewellery found on both sides of the skull, the grave of the child of the *infans I* age group contained a silver ring with a round cross-section on either side of the skull. Additionally, underneath the cervical vertebrae, there was a pair of copper-alloy

<sup>166</sup> Szőke 1962 50. On the relevance of the Ptuj site to Hungary, Szőke 1956; Korošec 1985.

<sup>167</sup> Török 1962 144; Mesterházy 1991 145.

<sup>168</sup> Dostál 1965 385.

<sup>169</sup> Giesler 1981 97–99, 165–166; Mesterházy 1991 145.

<sup>170</sup> Mesterházy 1991 145.

<sup>171</sup> Török 1962.

<sup>172</sup> Szigeti – Szilágyi 2013 861–862.

<sup>173</sup> Due to the track-laying works of a short-gauge railway line carried out in the area, Gyula Török could not investigate the entire site. He was unable to explore the site at certain parts of the track. Therefore, the internal division of the cemetery on the drawing by Török is unreliable at several points, Török 1962.

<sup>174</sup> Török 1962; Giesler 1981 33–55; Kovács 1997 84–85; Szigeti – Szilágyi 2013.

<sup>175</sup> Török 1962 140, 144, Taf. VII–VIII, Taf. XIII.

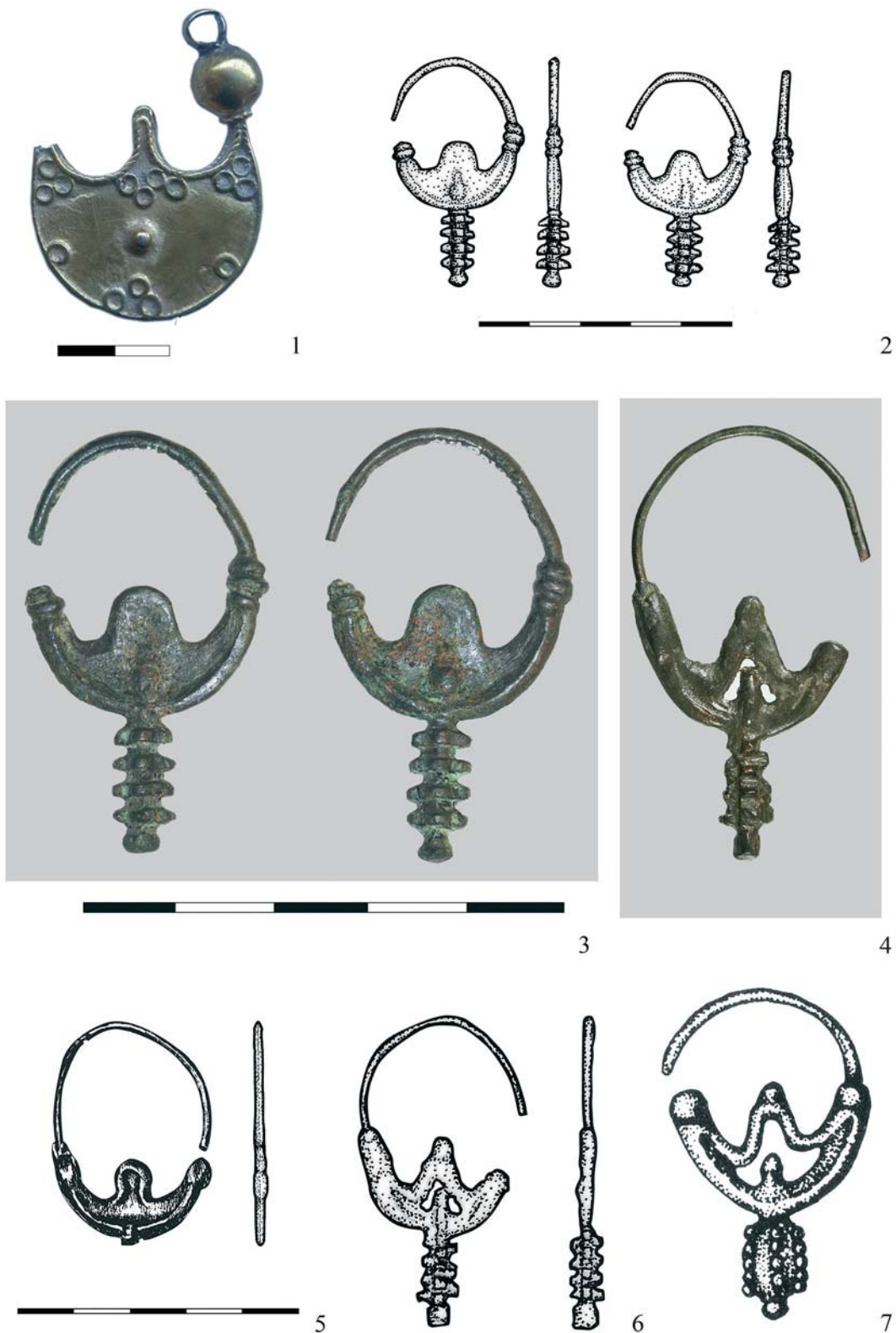


Fig. 13. 1. Parallel of the pendants and earrings decorated with a crescent on their inner arch from the steppe areas; 2–7. Crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant from the Carpathian Basin. 2–3. Halimba-Cseres, Grave 859; 4, 6. Felgyő-Kettőshalmi-dűlő, Feature 2076; 5. Batina (Kiskőszeg); 7. Pančevo (Pancsova) (1. Photograph: ©Attila Türk; 2, 5. Drawings: ©Zsóka Varga; 3. Photograph: ©Péter Langó; 4. Photograph: ©Patricia Mészáros; 6. after *Mészáros 2014*; 7. after *Bálint 1991*)

braid discs with five rings. Above the cervical vertebrae and ribs, there was a string of beads.<sup>176</sup> At a distance of 4–6 cm from the tip of the left shoulder blade, there were two animal teeth. On either side of the right clavicle, two cast bronze ball buttons were discovered. On the eighth vertebra, a pressed rosette lay, while on the ninth vertebra, there was a *denarius* of Hugh of Provence (Arles), King of Italy (926–931), minted in Venice.<sup>177</sup> On the ring finger of the right hand, there was a silver band ring with a ribbed surface. Additionally, the remains of some organic material could be observed in the burial, but the publication did not discuss their exact position and character.

The earrings (current location and inventory number: Hungarian National Museum, Budapest 55.1.1084.A) are well-preserved, cast bronze pieces (*fig. 13. 2–3*). Their dimensions: height: 4.3–4.49 cm, width: 2.55 cm. The thickness of the upper arch: 0.13–0.16 cm. The thickness of the middle, curved part of the loop: 0.13–0.16 cm, the length of the vertical ornament shaped at the bottom: 1.43 cm, the diameter of the four-pronged pendants: 0.64–0.66 cm. The weight of the items: 5.21–5.52 g.

The jewellery cast as one piece can be divided into two parts. The upper arch is made up of a wire of round cross-section tapering towards the end. The lower arch terminates in two decorative ribs on both sides. The lower arch consists of a wire of oval cross-section with a wavy profile on the inside. On the vertical central axis, the lower arch has a four-pronged ornament. Along the vertical axis of the ornament, there is an oval boss in the middle of the wavy, curved part above the lower arch. The objects got slightly deformed during use and their surface is tarnished. Otherwise, they are well-preserved pieces. The slanting marks at the points of the open, tapering upper arches, as well as the minor casting defect (inclusion) in one of the upper arches were caused by casting. The wavy decoration of the lower arch also bears the traces of casting.

Batina (Kiskőszeg, Croatia, Osijek-Baranya county), a stray find. In June 1911, a fragment of such a piece of jewellery and an S-terminalled lock-ring discovered at the settlement that currently belongs to Croatia were purchased from subvention. The find circumstances and the exact provenance are unknown.<sup>178</sup>

Broken, cast bronze earrings (current location and inventory number: Janus Pannonius Museum, Pécs 55.1.1084.A) (*fig. 13. 5*). Dimensions: height: 3.65 cm, width: 2.6 cm. The thickness of the top arch: 0.14 cm. The thickness of the middle, curved part of the hoop: 0.13–0.16 cm.

The jewellery cast as one piece can be divided into two parts. The upper arch is round and the lower arch is oval in its cross-section. The lower arch terminates in two elongated oval ornaments on both sides. On the inner side of the lower arch, there is a cast plate with a wavy profile. The ornament originally attached to the lower arch along its vertical central axis is broken off. The wire of the upper arch is damaged in one place, a part of the material is missing.

Felgyő-Kettőshalmi-dűlő (Csongrád county), feature no. 2076. The large-scale excavation of the archaeological site conducted between 2006 and 2007 brought to light a total of 4.665 features. Among other things, 127 burials of an 11th-century cemetery were unearthed in the area.<sup>179</sup> Pit no. 2076, with a round opening, curved sides, a straight bottom, which was found outside the cemetery and in which an earring was found was considered contemporaneous with the burials.<sup>180</sup>

A cast bronze earring (current location and inventory number: Koszta József Museum, Szentes 2007.8.34799) (*fig. 13. 4, 6*). Dimensions: height: 4.8 cm, width: 2.5 cm. The jewellery cast as one

<sup>176</sup> According to the observation made by Gyula Török, the beads could have been stitched onto the clothing, *Török 1962* 144. There are currently 525 poorly preserved beads in the collection.

<sup>177</sup> On the identification of the coin, *Kovács 1989* 32. no. 111. was associated with a wrong minting site. This error was corrected by *Coupland – Gianazza 2015* 316.

<sup>178</sup> *Kiss 1983* 43.

<sup>179</sup> *Mészáros 2014*.

<sup>180</sup> *Mészáros 2014* 539, n. 7, 584, fig. 37. 17 (In the caption, feature no. 2076 is erroneously referred to as a burial. According to the text of the footnote, it was a pit).

piece can be divided into two parts. The upper arch has a round cross-section and the lower arch has an oval cross-section. The lower arch is thicker and more irregular in design than the upper one, and it has a wavy profile on the inside. The arch is pierced through in the shape of a V, so the continuation of the pendant found on the central axis of the jewellery fills this part. The four-pronged ornament on the external edge of the lower part has remained in good condition. In the prismatic decoration of the pendant with trapezoidal prongs, the prongs are irregular and got damaged during casting. The edges of the protruding prongs were not filed after casting. The object is a casting of relatively poor quality. The joint flashes along the pierced hole in the middle of the crescent-shaped ornament with a wavy profile were not filed down, either. The four-pronged pendant got bent during use. The deformation of the upper arch also suggests that the object was subjected to considerable pressure, but the lack of wear-marks that would indicate prolonged use and the fact that the casting fins can be still observed suggest that the item may have been worn for a short time.

In addition to the objects above, there are several finds that can be connected to the 10th-century horizon of the Carpathian Basin, which belong to foreign collections.

In Slavonia, one of the burials of the forty-two-grave village cemetery at the site Veliko polje, near present-day Zvonimirovo,<sup>181</sup> contained such types of earrings (*fig. 14. 1*).

Two such earrings were yielded by grave no. 19 of the cemetery, in which a woman was buried. In addition to these finds, the burial contained four earrings of Kiev-Volhynian type cast from a silver alloy, two silver S-terminalled lockrings, and two bronze finger-rings (one of which was tinned).<sup>182</sup>

The earrings (currently preserved in Croatia) are cast of silver.<sup>183</sup> Their dimensions are unknown.

The jewellery cast as one piece can be divided into two parts. The upper arch is round, while the lower arch is oval in its cross-section. The lower and upper arches are separated by a spherical ornament on each side. On the inner side of the lower arch, there is a cast plate with a wavy profile, which gets thicker along the edge, imitating wire decoration. On the external edge of the lower arch, along the central vertical axis of the jewellery, there is a considerably simplified, four-pronged ornament that has remained in good condition.

A stray find from the area of Pančevo (Pancsova, Serbia) – or maybe Banatska Palanka (Palánk, Serbia) – belonging to the southern part of Banat, present-day Serbia, was included in the old collection of the City Museum of Vršac (*fig. 13. 7*).<sup>184</sup>

The earring (current location and inventory number: City Museum of Vršac, 14730) was cast of copper alloy. Its dimensions are unknown. The upper arch of the jewellery is round, the lower arch is oval in its cross-section. The lower arch is thicker than the upper one. Inside, there is a wavy plate pierced through in a V-shape which is filled with the continuation of the pendant along its central axis. The four-pronged pendant connected to the lower part is intact and decorated with beads imitating granulation.<sup>185</sup>

<sup>181</sup> Tomičić 1996–1997; Tomičić 1997; Tomičić 2019. On the anthropological data of the cemetery, Boljunčić 1997. For the genetic testing producing very informative results, Boljunčić 2007.

<sup>182</sup> On the material of the objects determined by Željko Tomičić as silver, I could not find more precise data produced by metal composition analyses.

<sup>183</sup> Tomičić 1997 78–79.

<sup>184</sup> Bálint 1991 245, Taf. LXII. a17, 245. Mesterházy 1991 145. n. 6. This find is referred to under a different site name at Grigorov 2007 36. Certainly, the same find was published by Stanimir Barački and Marin Brombolić, who referred to the region of the Karas River near Banatska Palanka as its provenance. Unfortunately, we were unable to decide exactly to which site the object may have originally belonged, Barački – Brombolić 1997 210.

<sup>185</sup> According to the drawing published by Bálint 1991 Taf. LXII. a17, the shape of the pendant was ovoid. Based on the photograph by Stanimir Barački and Marin Brombolić, however, it rather had the traditional elongated rectangular shape, Barački – Brombolić 1997 210.

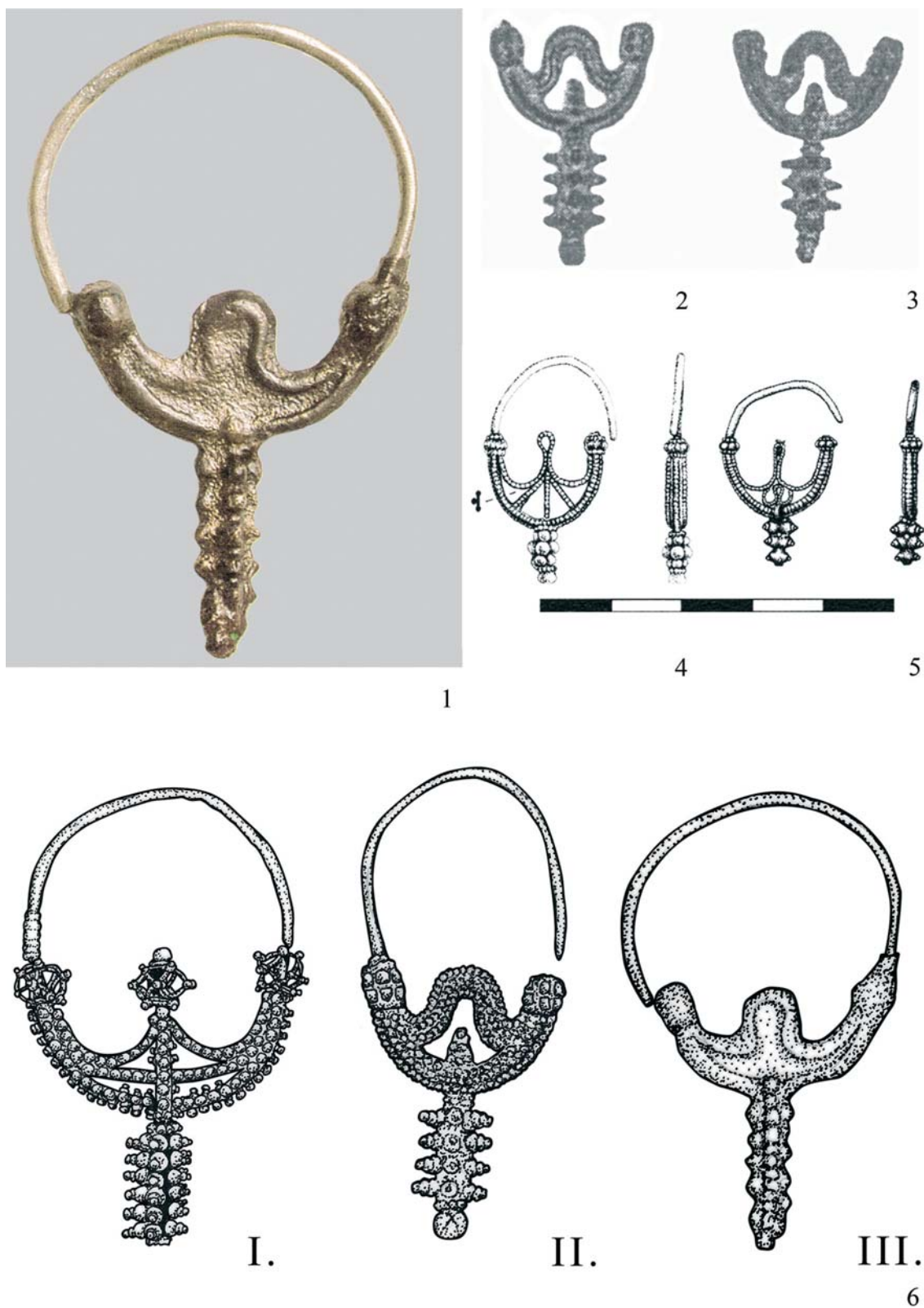


Fig. 14. 1–5. Crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant from the Carpathian Basin. 1. Zvonimirovo-Veliko polje; 2–3. Banatska Palanka (Palánk); 4. Zalavár-Vársziget, Hadrian’s Temple Grave 37/2000; 5. Zalavár-Vársziget, Hadrian’s Temple Grave 157/99; 6. the classification of the type (1. after Tomičić 1997; 2–3. after Barački – Brombolić 1997; 4–5. after Szőke 2014; 5. Drawing: ©Zsóka Varga)

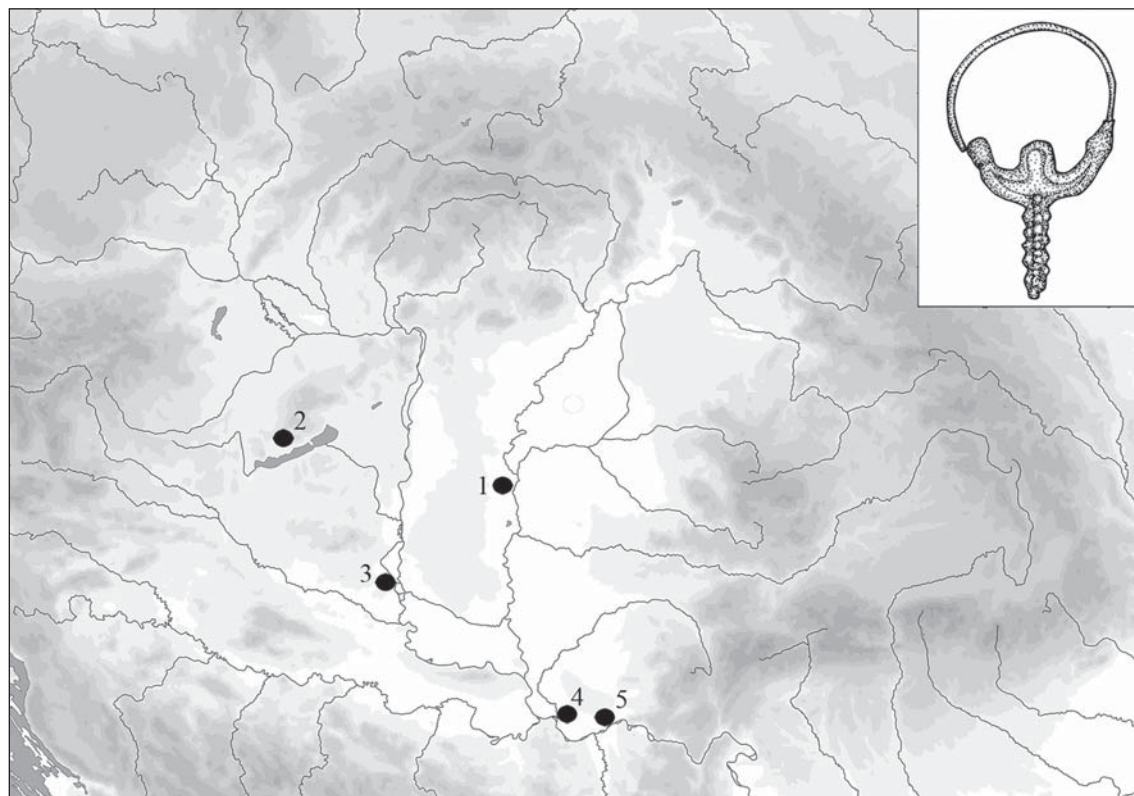


Fig. 15. Distribution of the 10th–11th-century crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant in the Carpathian Basin.  
 1. Felgyő-Kettőshalmi-dűlő, Feature 2076; 2. Halimba-Cseres, Grave 859;  
 3. Batina (Kiskőszeg); 4. Pančevo (Pancsova); 5. Banatska Palanka (Palánk); 6. Zvonimirovo

Before World War II, several 10th–12th-century finds were taken to the museum from a site located by the Karas River, near the Banatska Palanka (Palánk), approximately 50 km from Pančevo. These finds comprised, among other things, a pair of jewellery belonging to the type under discussion (*fig. 14. 2–3*).<sup>186</sup>

The pair of earrings (current location: City Museum of Vršac) are cast, fragmentary pieces. Their dimensions are unknown. The upper arch of the jewellery is missing. The lower arch has an oval cross-section and a wavy plate on the inside. The wavy arch is pierced through in the shape of a U, and the continuation of the pendant can be seen along the central axis of the jewellery. On the outside of the lower arch, the four-pronged ornament has been preserved. The pendant of one of the earrings is in better condition, the other one is deformed.

The finds presented above faithfully reflect the 10th-century variants of the object type themselves. Nevertheless, it is worth comparing the items found in the Carpathian Basin with each other, as well. Most of the currently known finds are made of bronze. Only the pair of jewellery from Zvonimirovo was described by its publisher as being made of silver (*fig. 14. 1*).<sup>187</sup> The pieces of jewellery were mostly discovered in pairs, especially when observed *in situ* in graves. Of these pieces, the Slavonian ones are closely related. The finds discovered in Batina and Zvonimirovo must have been made in similar moulds, the only difference between them being their raw material. The comparison of the pieces of jewellery discovered at other sites with the aforementioned finds or with each other reveals no such similarities. The upper arch of each item is open. The

<sup>186</sup> Barački – Brombolić 1997 210.

<sup>187</sup> Tomičić 1997 78–79.

differences between the objects can be observed mainly in the openwork decoration of the wavy element and in the design of the four-pronged pendant. The items from Halimba had the most robust decorative pendants. In contrast, the ornaments of the finds from Zvonimirovo seem to be quite thin, especially in comparison with the former. The pendant part of the item from Pančevo/Banatska Palanka had an interesting, unique design. It appears to be shorter than what is typical of this type of object. I did not come across any find of similar design even in the wider area of the collection. In the light of the above, a narrow-scale, local tradition of production can be identified in Slavonia, but concerning other finds from the Carpathian Basin, no such circle can be detected.

## 2.2. Views concerning the classification of the object type

Mirjana Ćorović-Ljubinković was the first to discuss the jewellery thoroughly in her analysis of early medieval earrings found in the territory of the former Yugoslavia.<sup>188</sup> She has already realised that these pieces of jewellery represented a well-distinguishable type with marked features, so she separated them in her typological work highlighting the characteristic features of this group of finds through numerous examples.<sup>189</sup> In this work, the renowned researcher regarded the pierced wavy inner arch as a key feature of the separation, so she included several objects in the group, where the lower arch terminated in a cast spherical ornament instead of a prismatic pendant.<sup>190</sup> The relatively small number of finds still allowed the joint discussion of finds with globular and prismatic pendants back then. Today, these finds are rather classified as “hybrid” items mentioned in the previous chapters. Following the work written by Mirjana Ćorović-Ljubinković, Béla Szőke called attention to these finds, emphasizing that one of their basic features was “a spiky cluster hanging from the lower arch”.<sup>191</sup> Subsequently, Bořivoj Dostál analysed this type of object, which still has an impact on their interpretation today. He did not include pieces with a globular pendant in the collection and – similarly to Szőke – he emphasised that these items had two typical features, a wavy inner arch and a prismatic pendant.<sup>192</sup> Another turning point in research was represented by the work of Jochen Giesler (type Giesler 15b) and Károly Mesterházy (type 10), who also discussed these finds as a separate group (*fig. 12. 1*). The difference between their classifications is that Giesler assumed a close connection between the cast items and the more complex but similarly designed pieces decorated with filigree wire and granulations also mentioned by Bořivoj Dostál, while the Hungarian researcher put a greater emphasis on the production techniques employed during the manufacturing of this type of jewellery rather than its

<sup>188</sup> Ćorović-Ljubinković 1951 50.

<sup>189</sup> In the classification by Mirjana Ćorović-Ljubinković, these pieces of jewellery belong to variant 5 of Type II. In her work, she also included here another piece of bronze jewellery discovered near Ritopek, Ćorović-Ljubinković 1951 52, *fig. 18. 7*. However, in my opinion, this cannot be considered to have been a member of this group.

<sup>190</sup> For example, the find from Kurvingrad, Ćorović-Ljubinković 1951 52, *fig. 18. 8*, referred to by her and the piece of jewellery discovered in the area of Kupinovo (Kölpény, Serbia), Ćorović-Ljubinković 1951 53, *fig. 18a* are such items (*fig. 20. 7*). The views and classification associated with the renowned specialist still have an impact on research, and rightly so, *Cat. Zagreb 2003* 117–118.

<sup>191</sup> Szőke 1962 50.

<sup>192</sup> The grouping by Bořivoj Dostál had several elements that were rejected by subsequent analyses. For example, he classified here those earrings decorated with a ball made of sheet plate (subgroup 4 in his classification) on the inner arch of which there was a crescent-shaped, wavy ornament, but the pendant with spherical decoration terminates in an elongated column, *Dostál 1965* 384–387, *Karte 4*. For the separation of this group, *Mesterházy 1994* 212–214. The difficulty of applying this division later was due to the fact that this type of jewellery was classified into the same group as earrings with a pierced plate and globular decorations on the inner and outer arches. For the latter type, Ćorović-Ljubinković 1951 50; *Giesler 1981* 95–99, *Taf. 3*; *Mesterházy 1991* 146.

design when describing it.<sup>193</sup> Accordingly, Mesterházy regarded the pointed or wavy decorative element in the inner part of the lower arch as less important. In addition, he involved several objects in the analysis where the prismatic pendant of the lower arch could be well observed, but the inner edge of which was decorated with a sectioned globular, ribbed, or undulating ornament instead of a plate with a wavy top. He also included here those pieces which were decorated with a ball instead of a prismatic pendant at the bottom.<sup>194</sup>

The research results of Dostál gave important support not only to the interpretation of jewellery discovered in the Carpathian Basin and South-Eastern Europe but also concerning those items that were discovered in Moravia and the northern region.<sup>195</sup> Among the earrings decorated with granulation and beaded wire, the pieces with a pointed plate on the inner arch also formed a well-distinguished group in this region.<sup>196</sup> Furthermore, in his analysis of the silver treasure horizons (Group XIII), Roman Jakimowicz also called attention to the characteristic production techniques used for the manufacturing of this object type.<sup>197</sup> Polish researchers not only gathered analogues found in their region, interpreting the emergence of these finds primarily as a Moravian influence,<sup>198</sup> but they also demonstrated that this type of jewellery brought about new object types due to their being combined with different kinds of earrings in the 10th century.<sup>199</sup> The dating of the parallels discovered there was considerably aided by the fact that a significant part of the Polish finds belonged to treasure hoards. The time of hiding of the individual finds in the ground could be determined quite closely by the latest coins.<sup>200</sup> The idea that this type of object should be assessed on the basis of the finds discovered in the Middle Danube Region was modified by the discovery of a piece of jewellery in grave no. 27 at site Galiče, Bulgaria (*fig. 19. 16*), published in the 1970s,<sup>201</sup> which was first pointed out by Giesler.<sup>202</sup> Subsequently, the connections of the group of finds with South-Eastern Europe were given new prominence. Similar pieces of jewellery have become known in increasing numbers in the territory of present-day Bulgaria due to the investigations carried out by Valeri Grigorov (*fig. 17. 16, fig. 19. 13–16, fig. 20. 1–6*).<sup>203</sup> Furthermore, a find like this was unearthed in Gnezdovo, Russia (*fig. 20. 12*).<sup>204</sup> Most recently, the object type has been explored by Maja Petrinc in detail, who relied on the observations of Giesler and the findings of Dostál as a starting point.<sup>205</sup> She also grouped the parallels known to her among earrings. In her view, the group of finds with Byzantine characteristics spread from the Middle Danube Region both northwards and southwards. In Dalmatia, the simpler, cast pieces of the jewellery type were in use.<sup>206</sup>

<sup>193</sup> Giesler 1981 94–103, 165–166; Mesterházy 1991 145. These considerations as well as the observation that it is a common feature of many pieces of hoop jewellery that their characteristics described by the methods of archaeology and classified into separate types of earrings according to their design appear together, resulting in unique, so-called mixed types, Mesterházy 1991 154.

<sup>194</sup> Mesterházy 1991 145.

<sup>195</sup> Kóčka-Krenz 1993 82–83; Zoll-Adamikowa – Dekówna – Nosek 1999 109–111.

<sup>196</sup> Hanuliak 2004 169.

<sup>197</sup> Jakimowicz 1933 121.

<sup>198</sup> Wachowski 1981; Kóčka-Krenz 1982.

<sup>199</sup> Zoll-Adamikowa – Dekówna – Nosek 1999 109–111.

<sup>200</sup> Table 2. 8, 10, 13–16, 18; Wachowski 1981; Kóčka-Krenz 1993 82–83, 132; Zoll-Adamikowa – Dekówna – Nosek 1999 14–15.

<sup>201</sup> Važarová 1976 232, 234.

<sup>202</sup> Giesler 1981 98.

<sup>203</sup> Grigorov 2007 36.

<sup>204</sup> Petruhin – Puškina 1996 59–60, no. 370; Zoll-Adamikowa – Dekówna – Nosek 1999 110.

<sup>205</sup> Petrinc 2009 266–267. She also used the term “pine-cone-shaped” (“*zapfenförmiger Verzierung*”; “*ukrasom u obliku češera*”) to describe the pendant.

<sup>206</sup> Petrinc 2009 266–267.



### 2.3. *The classification of the earrings*

Previous research generally interpreted this group of finds as a separate type or as a variant of crescent-shaped earrings.<sup>207</sup> The reason for this is the – previously presented – tendency that researchers studying this type of object predominantly relied on finds discovered their own region, and despite a broader outlook, they normally did not find it necessary to explore the individual types comprehensively.<sup>208</sup> A finer distinction was made by Dostál, as discussed above, as well as by Grigorov, who made a classification under the influence of Čorović-Ljubinković. However, the latter researcher did not interpret this group of finds as an independent type either but viewed it as part of a bigger unit. Nevertheless, the inference made by the Moravian researcher that the jewellery type evolved from 9th-century finds decorated with real granulations in the Middle Danube Region, and it was their simplified, cast version that emerged somewhat later in the South, proved to be an important observation.<sup>209</sup> This also represents the cornerstone of a comprehensive classification, because it also implies that those 9th-century artefacts also need to be taken into account that are not closely related to the period in question but are connected to the development of the 10th-century types of the jewellery. Another important aspect was the recognition made by the Serbian researcher when, in connection with the cast versions of the object type, she drew attention to those items the lower arch of which had a globular ornament instead of a four-pronged decorative element. This finding was later confirmed by Mesterházy and Grigorov, as well.<sup>210</sup> The latter researcher divided the crescent-shaped earrings into two groups: pieces with a cast four-pronged decoration and a spherical ornament (or a biconical bead).<sup>211</sup> Due to the classification made by the Bulgarian researcher, the finds from South-Eastern Europe became readily distinguishable. As a result, the fundamental elements of the cast finds that were widespread there could also be identified. These are the crescent-shaped sheet metal with openwork decoration formed on the inner arch and the prismatic pendant with elongated diamond-shaped ribs, which were cast together with the earrings.

The present paper does consider those finds that were decorated with globular ornaments or biconical beads,<sup>212</sup> or those which had no wavy decorative element on the inner edge of the

<sup>207</sup> Regarding the classification of 9th–10th-century finds, there are two major trends in research. One discusses the object types by major groups and derives the individual sub-types and variants from them, e.g., Čorović-Ljubinković 1951; Grigorov 2007; Sokol 2016. The other approach starts with the separate types and analyses those, e.g., Mesterházy 1990; Mesterházy 1991; Petrinc 2009. The advantage of the first grouping is that it connects pieces of jewellery that developed from a similar design. Its disadvantage is that it is difficult to distinguish minor groups of design within the large system. In the case of the other approach, the latter aspect is more prominent, but – in the case of a comprehensive analysis – the former aspect (demonstrating links among the major similar groups in terms of design) mentioned above is given less room. During my work, I opted for the second approach, but I also tried to make sure that I would implement the aspects of the first line during the analysis. In my view, the comparative material that can be gathered in the regional context is so substantial that it is possible to carry out such a complex analysis.

<sup>208</sup> This position is understandable, as it is very difficult to form an opinion on the artefacts of other regions exclusively on the basis of the publications focusing on different aspects, in which often only few data of the objects are given. The analysis made by me probably also contains a number of errors and misunderstandings, which will become apparent after further investigations carried out on the individual (already published) finds.

<sup>209</sup> More recently see, for example, Petrinc 2009 267.

<sup>210</sup> Mesterházy 1991 145; Grigorov 2007 36.

<sup>211</sup> In his classification, Grigorov differentiated Sub-Types 7 and 8 (the latter having a globular pendant on the lower arch) within crescent-shaped earrings (Type V), Grigorov 2007 36.

<sup>212</sup> Such finds with a biconical bead decoration were discovered, for example, in Batin (Stančev 1985 51), Novgrad (Dymaczewski – Hilczernowa – Wislanski 1965 259), and Poprusanovo (Grigorov 2007 36).

lower arch, only the four-pronged prismatic pendant.<sup>213</sup> We do not discuss the northern mutations of the jewellery, either.<sup>214</sup> The reason is that these finds do not correspond to the definition of the object type summarised above because they lack either the wavy inner arch or the four-pronged pendant.<sup>215</sup> Nevertheless, it is important to refer to these pieces briefly, as well. They were apparently “hybrid” forms of the object type that had already evolved in the Balkans (most likely in the territory of present-day Bulgaria),<sup>216</sup> yet their appearance presumably represented the last phase in the metamorphosis of this object type.<sup>217</sup>

It is uncertain in this case as well, whether the individual objects were worn as earrings or pendants. Many researchers regarded these objects as earrings. Béla Miklós Szőke pointed out that in the 9th century, such pieces of jewellery could also be worn as pendants.<sup>218</sup> The complexity of the question is highlighted by the fact that the Hungarian researcher himself refers to them as “earrings” in his more recent analysis.<sup>219</sup> Although in several burials only one or two such pieces of jewellery were found, there were also other types of jewellery of similar size, which seem to suggest that they were worn as pendants.<sup>220</sup> Nevertheless, it does not eliminate the possibility that some of the finds discovered in the burials were used as earrings.

Building on the results of the investigations above, I propose a classification according to design, which may be further refined in the future with the help of archaeometrical analyses<sup>221</sup> and thorough studies including the description of the individual objects.

I relied on a database of 64 sites as well as nine stray finds and assemblages to prepare the classification, and took into account a total of 90 pieces of jewellery and a significant number of fragments (*Table 2*).

In view of the above, the finds can be grouped into three types (*fig. 14. 6*):

- I. Items decorated with beaded wire and ball-shaped granules.
- II. Simple items cast as one piece, where the inner arch of the earring is decorated with a piece of perforated crescent-shaped sheet metal.
- III. Simple items cast as one piece, where the inner arch of the earring is decorated with a piece of unpierced crescent-shaped sheet metal.

#### 2.4. *The characteristics of Type I*

The items of Type I are carefully crafted, high-quality pieces of jewellery made mainly of silver and gilded silver,<sup>222</sup> and less often gold.<sup>223</sup> Their design (being soldered together from several tiny

<sup>213</sup> Such an object is known, for example, from sites Buzet (*Marusić 1962 462*), Preslav (*fig. 20. 8, Mavrodinov 1959 224*); Novgrad (*Dymaczewski – Hilczarowna – Wislanski 1965 259*), and Valčedram (*Mesterházy 1991 145*).

<sup>214</sup> In detail on these, *Zoll-Adamikowa – Dekówna – Nosek 1999 109–111*.

<sup>215</sup> I could not identify any find without a wavy inner arch in the Carpathian Basin, while an item with a spherical decoration was discovered along the Sava, in the area of Kupinovo mentioned above (*fig. 20. 7*), *Ćorović-Ljubinković 1951 53*.

<sup>216</sup> *Grigorov 2007 36, 173*.

<sup>217</sup> In this case, it is important to emphasise again that – to the best of my knowledge – this simplification in design does not represent a well-separable chronological phase compared to the use of the Types II and III to be described below.

<sup>218</sup> *Szőke 2014 98*.

<sup>219</sup> *Szőke 2020 440, 442*.

<sup>220</sup> *Ruttkay 2005 48*. A similar piece of jewellery found in grave no. 37/2000 of Zalavár-Hadrian’s Temple was probably also worn as a pendant, which is supported by the other pendants with a bunch of grape found in the tomb (*fig. 14. 4*). I am grateful to Béla Miklós Szőke and Ágnes Ritoók for sharing with me the data about the assemblage.

<sup>221</sup> A good example for this is offered by *Zoll-Adamikowa – Dekówna – Nosek 1999 79–95*.

<sup>222</sup> *Table 2. 1–2*.

<sup>223</sup> *Table 2. 25, 28–29; Galuška 1996 96*.

elements) and raw material suggest that these objects were popular among the elite of the period.<sup>224</sup> The silver granules of different sizes and beaded wires soldered to the lower arch demonstrate that they were the products of outstanding goldsmiths' workshops (*fig. 18*).<sup>225</sup>

The finds listed here represent a significant proportion of the object type. I managed to collect 46 intact and another 32 fragmentary finds from 38 sites. The other two Types fall behind the present group in terms of the number of finds even combined.<sup>226</sup>

The upper arch of the jewellery is made of wire with a round cross-section. The two ends of the lower arch often terminated in an element made up of small spherical ornaments soldered to each other. The elements decorated with small balls were flanked by a thin disc on each side.<sup>227</sup> In the late ninth and early 10th centuries, the lower arch typically terminated in a large sphere made of sheet metal.<sup>228</sup> Later in the 10th century, some of these large spheres were perforated.<sup>229</sup>

The items of this Type uniformly had a frame converging in a tip in the middle of the inner arch, often strengthened with a straight bar connecting the two terminals of the arch<sup>230</sup> or a beaded wire bent in the shape of an  $\Omega$  that filled the arch inside.<sup>231</sup> Over time, the originally unadorned crossbar was replaced with a decorated metal strand,<sup>232</sup> which often consisted of two wires soldered together instead of one piece of wire.<sup>233</sup> In many cases, the apex of the arch was further decorated.<sup>234</sup> This became a more common practice in the case of later, over-decorated ("Baroque-like") pieces.<sup>235</sup> In these cases, the structure could also be strengthened with a vertical bar along the central axis of the piece of jewellery (*fig. 18*).<sup>236</sup> Beaded wires<sup>237</sup> or granules<sup>238</sup> were soldered to the wire forming the lower arch in a way that this decoration would run along all four<sup>239</sup> but at least three sides of the arch.<sup>240</sup>

The prismatic pendant of these items, like other parts of the jewellery, was made of many elements soldered together. The granules consisting of larger balls were soldered here so as to

<sup>224</sup> *Galuška 2013* 187; *B. M. Szóke 2020* 440.

<sup>225</sup> *Galuška 1989*; *Galuška 2013* 108–161; *Galuška 2014*.

<sup>226</sup> Type II has altogether 30 items (from 22 sites and five stray finds), while Type III consists of seven pieces of jewellery (from five sites), *Table 2*.

<sup>227</sup> *Table 2. 2, 11, 17, 19–27, 29–31, 33, 37, 60, 68–69*.

<sup>228</sup> *Table 2. 28*. For the recent dating of the burial, *Cat. Brno 2014* 404. For its earlier interpretation, *Ruttkaý 2005* 33; 48.

<sup>229</sup> *Table 2. 29*. On its dating see, *Kóčka-Krenz 1993* 82, 231; *Zoll-Adamikowa – Dekówna – Nosek 1999* 109; *Cat. Brno 2014* 461.

<sup>230</sup> *Kóčka-Krenz 1993* 82; *Table 2. 1, 19*.

<sup>231</sup> *Table 2. 1, 5, 18–22, 25, 28, 32–33, 35, 70–71*. This wire was sometimes made of the same material as the frame (e.g., *Table 2. 1, 17, 20, 25*), but in most cases, a different kind of wire was used for this (e.g., *Table 2. 5, 19, 22–24, 26, 69*). It can also be observed that the ends of the wires bent in an  $\Omega$  shape were sometimes turned inwards (e.g., *Table 2. 5, 20–22, 26, 68–69*), but generally, they were twisted outwards (e.g., *Table 2. 1, 17, 19, 23*).

<sup>232</sup> For the design of wires with different types of decoration, *Wolters 1998* 378; *Rácz 2009* 83. The items belonging to Type II often imitated the decorations of beaded wires or twisted wires typical of Type I. *Table 2. 44, 46–48, 50–51*.

<sup>233</sup> *Table 2. 28, 60*.

<sup>234</sup> In the beginning, this decoration must have been a major granulation (*Table 2. 1, 22–23, 27, 37*), which was later complemented with further granules (e.g., *Table 2. 11, 27, 69*) and more and more complex structures of decoration were added to it (e.g., *Table 2. 17–18, 25*).

<sup>235</sup> *Kóčka-Krenz 1993* 82.

<sup>236</sup> *Table 2. 11, 18*; *Zoll-Adamikowa – Dekówna – Nosek 1999* 76–77.

<sup>237</sup> *Table 2. 5, 17, 21–30, 68–69*.

<sup>238</sup> *Table 2. 11, 18, 20, 60*.

<sup>239</sup> *Table 2. 11, 18, 25, 28–29*.

<sup>240</sup> In those case when the three sides of the arch were decorated, there was no such ornament on the inner side of the arch. *Table 2. 5, 20, 23–24, 26–27*.

form four-pronged structure specific of this type of jewellery.<sup>241</sup> In most cases, the large granules of the pendant thus constructed were further decorated with one<sup>242</sup> or more additional granules of smaller size.<sup>243</sup> In the case of 10th-century finds, however, it could also be observed that the axis of the decorative pendant consisted of a wire and the granules were soldered to that (*fig. 16. 1, 3–4, 6–14*).<sup>244</sup> The element at the end of the pendant was varied in shape and design. In some cases the object had no such element at all, or if there had originally been one, it broke off over time.<sup>245</sup> When the terminal can be still observed, it is usually a regular globular ornament, which was also adorned with granules.<sup>246</sup> Biconical beads<sup>247</sup> and – in the case of finds from Poland and Russia – elaborate ornaments of irregular shape could also decorate the end of the pendant.<sup>248</sup>

Regarding the size of the finds, it is worth noting that, in general, the 9th-century items had smaller height (2.3–3.3 cm) and width (1.5–7.7 cm) than the pieces dating to the turn of the 9th and 10th centuries (height: 4.7 cm, width: 2.6 cm), or the 10th- and 11th-century pieces (height: 5.2 cm, width: 3.5 cm). It can be clearly observed, therefore, that this type of object became not only more and more adorned but also increased in its size. It is also worth adding that it probably does not necessarily mean that – as in the case of other groups of finds – the smaller pieces are earlier than the larger finds. Numerous examples illustrate that the smaller, thinner pieces of jewellery remained in use in the Middle Danube Region even after the more robust types emerged.<sup>249</sup>

This type of find developed in the Middle Danube Region. Its earliest specimens were discovered in Transdanubia, the Little Hungarian Plain, and the valley of the River Morava. In the cemetery of Holiare (Alsógellér, Slovakia) in Csallóköz (Veľký Žitný ostrov, Große Schüttinsel), it was discovered in an environment dated to the first half of the 9th century (*fig. 17. 13–15*) – provided it was not a subsequent burial.<sup>250</sup> The cemetery in Skalica (Szokolca, Slovakia), where grave no. 2 of barrow no. 3 yielded such a piece of jewellery, supports its early appearance in the 9th century.<sup>251</sup> The inner arch of the find discovered there already had an inner arch converging in a peak, and only the pendant part differed from the later items (*fig. 20. 13–14*).<sup>252</sup> Early pieces dating back to the first half of the 9th century were also present in the Váh (Vág) Valley,<sup>253</sup> and transitional types were found there too.<sup>254</sup> The 9th-century Moravian sites of outstanding significance already reflect the widespread use of the object type.<sup>255</sup> The jewellery also appears in Moravian archaeological material and its emergence is currently dated to the first third of the 9th century by researchers.<sup>256</sup>

<sup>241</sup> Their development is highlighted by finds from Zalavár, as well, *Szőke 2020* 440, fig. 99. 26–27, 32.

<sup>242</sup> *Table 2. 1, 22, 28.*

<sup>243</sup> *Table 2. 19, 20, 23–27, 29.*

<sup>244</sup> *Dostál 1965* 384–386; *Kočka-Krenz 1993* 82; *Zoll-Adamikowa – Dekówna – Nosek 1999* 76–77.

<sup>245</sup> *Szőke 2020* 442.

<sup>246</sup> *Table 2. 20, 24–26, 30, 60.*

<sup>247</sup> *Table 2. 19, 23, 28.*

<sup>248</sup> *Table 2. 11, 18, 69.*

<sup>249</sup> Similar observations were made in the case of bracelets, *Langó 2000* 41.

<sup>250</sup> *Točík 1968* 116, Taf. LXXXVIII. 8, 10

<sup>251</sup> *Budinsky – Krička 1959* 136. For a more recent interpretation of the site, *Szőke 2020* 419.

<sup>252</sup> The spherical design of the pendant also indicates that this closure, which later spread in the Balkans, was already present during the development of the object type.

<sup>253</sup> *Table 2. 28, 31.*

<sup>254</sup> Such an item unearthed in the cemetery of Borovce (Vágbori, Slovakia) was published by *Staššiková-Štukovská 1997* 199; *Staššiková-Štukovská 2001* 373; *Staššiková-Štukovská 2005*; *Ungerma 2005* 736. However, not only such finds are known from the site, but also a “hybrid” item with a bunch of grapes, *Cat. Brno 2014* 404.

<sup>255</sup> *Staššiková-Štukovská 2001* 373–374; *Hanuliak 2004* 169; *Cat. Brno 2014* 401–404.

<sup>256</sup> *Staššiková-Štukovská 1997* 199; *Ungerma 2005* 736.

Another important centre of the development of the object type was the territory of present-day Transdanubia. The earrings unearthed from the graves of women in cemeteries excavated in Zalavár clearly show the diverse forms within which the group of finds characterised in connection with Type I are strongly represented.<sup>257</sup> We can find among them those items where the pendant decorated with four-pronged granulation is already present, but the inner arch with a pointed top is still missing from them.<sup>258</sup> We can also identify those variants where the structure of the characteristic inner arch can be recognised, but the pendant is either a bunch of grapes<sup>259</sup> or a cylindrical sheet metal element decorated with granulation.<sup>260</sup> Among these, the pair of gilded silver jewellery discovered in grave no. 157/99 of the cemetery belonging to Zalavár-Hadrian's Temple demonstrates well how this type acquired its widespread features (*fig. 14. 5*).<sup>261</sup> In the case of these finds, the pendant decorated with a bunch of grapes was combined with an inner arch having a pointed top. These hybrid pieces also show another common feature of Type I described above, namely the cross-bar supporting the frame of the inner arch. Grave no. 37/2000 belonging to the cemetery surrounding Zalavár-Hadrian's Temple contained an object belonging to Type I, too (*fig. 14. 4*).<sup>262</sup> The finds discovered in Transdanubia and the Little Hungarian Plain along with the artefacts from the Morava Valley confirm the development and widespread use of the object Type I in the Middle Danube Region.

In the beginning, this type of jewellery was dated to the first half of the 10th century by Moravian researchers. However, the chronological division proposed by Vilhém Hrubý has become much more refined by now,<sup>263</sup> and it is obvious that the origins of this group of finds go back to the early Moravian find horizon dated to the first third of the 9th century.<sup>264</sup> The data above confirm this date, as well. Around the turn of the 9th and 10th centuries, this artefact type disappeared from the region due to a shift of power that took place in the Carpathian Basin. This can partly be explained by the fact that the group of objects in question had mainly belonged to the attire of the elite, both on the Carolingian border area and among the Moravians.<sup>265</sup> In the 9th century, no simple bronze variant of this jewellery existed that would have become part of common people's wear, as well. The disappearance of Type I from this region, however, did not mean its complete vanishing, as the type became fashionable in the North, in the territory of present-day Poland, from that time onwards. Its emergence in that region was also attributed to the above-mentioned shift of power by researchers.<sup>266</sup> Some of the craftsmen and the Moravian elite representing the fashion of such objects, found their new homeland in the North.<sup>267</sup> The fashion of these items can be observed in this region to the end of the 10th and the beginning of the 11th century.<sup>268</sup> Due to their presence in the North, these artefacts also reached the early Russian centres. Such pieces of jewellery were also discovered in Gnezdovo and Kiev (*fig. 20. 9–12*).<sup>269</sup> Their appearance in the latter area, as well as their occurrence in various silver treasure hoards, can be ascribed to the long Viking/Russian presence

<sup>257</sup> Szóke 2020 440, 445.

<sup>258</sup> Szóke 2020 442, fig. 99, no. 26.

<sup>259</sup> Szóke 2014 98; Szóke 2020 442, fig. 99, no. 30.

<sup>260</sup> Szóke 2020 442, fig. 99, no. 32.

<sup>261</sup> Szóke 2014 98.

<sup>262</sup> Table 2. 1.

<sup>263</sup> Galuška 1996 96; Chorvátová 2004; Chorvátová 2007; Ungerman 2005; Ungerman 2017 20–23.

<sup>264</sup> Staššíková-Štukovská 1997 199; Chorvátová 2007; Ungerman 2005 736

<sup>265</sup> Regarding the connections between representation and wear in the wider region, Nowotny 2013.

<sup>266</sup> Dostál 1965 385; Wachowski 1981 177–179; Petruhin – Puškina 1996 60; Zoll-Adamikowa – Dekówna – Nosek 1999 109; Tomičić 2003 154.

<sup>267</sup> Tomičić 2003 154; Zoll-Adamikowa – Dekówna – Nosek 1999 109–111.

<sup>268</sup> Gąssowska 1979 111–118; Kóčka-Krenz 1993 82–83; Zoll-Adamikowa – Dekówna – Nosek 1999 15, 111, 131; Karger 1958 180; Puškina – Muraševa – Einosova 2012 257–258.

<sup>269</sup> Karger 1958 178–182; Zoll-Adamikowa – Dekówna – Nosek 1999 110; Puskina – Muraseva – Einsova 2012 257–258.

in the region.<sup>270</sup> In this northern region, the object type underwent further changes. Several other types of pendants developed from it. However, those are outside the scope of the present study.<sup>271</sup>

It is also worth addressing briefly the issue of the southern origins of Type I. After Vilhém Hrubý, these artefacts are still generally called an “East-Byzantine type of jewellery” in Moravian research.<sup>272</sup> However, the type exists only in its name. Slovak and Czech researchers are unanimously of the opinion that, despite the similarities in design, this jewellery – similarly to the other types of objects listed here – cannot be considered a Byzantine legacy.<sup>273</sup> Its development can be probably connected to those craftsmen who, after the fall of the Avar Khaganate, started working for the elite of the Moravian Principality and the Carolingian border regions. There was a demand and adequate financial background for their employment in these territories.<sup>274</sup> The pieces sporadically occurring in the South are therefore not the forerunners of the finds discovered in the Middle Danube Region, but probably came from there.<sup>275</sup> This is also supported by their being dated to the late 9th<sup>276</sup> and early 10th<sup>277</sup> centuries. I could not find similar pieces of jewellery in the central parts of the 9th-century Byzantine State. Similarly, apart from the specimen found at the site Galiče in Bulgaria (*fig. 19. 16*), I could not detect such finds in the southern zone of the Balkans, either (*fig. 21*). This is important to note because in the case of other types of hoop jewellery held to be of Byzantine origins, the items of similar design can be readily detected in the inner parts of the empire and even their antecedents can be identified.<sup>278</sup> Conversely, in the case of the artefact type under discussion, no such observations could be made. In terms of the technological characteristics, it cannot be testified either that Byzantine innovation would have underlain the development of the object type.<sup>279</sup>

The findings presented recently by Béla Miklós Szőke have highlighted that these finds were not exclusively present in Moravia. Their use in Transdanubia as well as the emergence of different hybrid variants in the Carolingian peripheries suggest that these pieces of jewellery were widespread outside the Moravian Principality, as well. This type of object was therefore a representative type of jewellery in a wider region, which may not have exclusively originated in Moravia. Accordingly, it is worth paying special attention to connections with Carolingian Pannonia.<sup>280</sup> Ptuj, for example, where this type of jewellery also appears,<sup>281</sup> must have been under the authority of Priwina.<sup>282</sup> Consequently, we do not necessarily have to assume a direct Moravian influence concerning the southern occurrence of I. This may as well have taken place in the inter-related parts of the Carolingian peripheries.

### 2.5. Characteristics of Type II

These finds – as reflected by the classification above – are cast items made of a copper alloy with a simpler design than those belonging to Type I. Perhaps the closest antecedent of the Type Is

<sup>270</sup> On the question with further literature more recently, *Sikora 2019*.

<sup>271</sup> For these, *Zoll-Adamikowa – Dekówna – Nosek 1999* 110–111; *Komar 2012* 331–333.

<sup>272</sup> *Chorvátová 2007*. As an example for the earlier views, *Gassowska 1979* 130.

<sup>273</sup> *Štefanovicová 1995*; *Štefanovicová 2004*; *Chorvátová 2007*; *Ungerma 2017* 26–27.

<sup>274</sup> *Ungerma 2017* 26–27.

<sup>275</sup> *Žeravica 1986* 179; *Korošec 1999* 50–53; *Tomičić 2003* 154–155.

<sup>276</sup> *Zoll-Adamikowa – Dekówna – Nosek 1999* 111; *Tomičić 2003* 154.

<sup>277</sup> The finds from Ptuj (*Korošec 1996*; *Korošec 1999* 50) and Zadar (*Tomičić 2003* 153–154) were dated to the late 9th, early 10th centuries by Slovenian and Croatian researchers. In connection with the find from Galiče, also *Važarova 1976* 220–246.

<sup>278</sup> See, for example, *Langó 2010*.

<sup>279</sup> In the Byzantine innovation, *Daim 2000*.

<sup>280</sup> *Szőke 2020* 73, 226–227.

<sup>281</sup> *Table 2. 33*.

<sup>282</sup> *Szőke 2020* 437. n. 2876.

the find discovered in the much-referenced Ducové (Ducó, Slovakia) cemetery (*fig. 16. 11–12*).<sup>283</sup> The main difference between this group and Type I can be perceived in the raw material and the manufacturing technique employed. While the items belonging to Type I were always put together of several elements, the pieces of Type II were cast as one piece without exception.

The upper arch has a round cross-section in these pieces too, while the lower arch is ellipsoidal. The two ends of the lower arch terminate in a beaded frame<sup>284</sup> or a globular ornament on each side.<sup>285</sup> Both solutions are imitations of the relevant elements of Type I presented above. This part of the jewellery is almost completely unimportant in many items, as in the case of the aforementioned pieces discovered in the Carpathian Basin (Felgyő and Pančevo/Banatska Palanka). Here, only the slightly thickening shape of the lower arch indicates its closure.<sup>286</sup> The beaded decoration, often arranged in three rows on the lower arch, marks the place of the former filigree wire or granulation. On the cast pieces of higher quality, this decorative frame also runs along the inner and outer edges of the arch, as well as in the middle.<sup>287</sup> In the case of items of poorer workmanship, however, they are visible only in the middle of the arch.<sup>288</sup> There are also schematic pieces where merely a rib protruding from the surface of the arch has remained of the former decoration.<sup>289</sup> In some cases (such as the finds from the Banat, or the item from Felgyő) the imitation of these decorative elements is entirely missing.<sup>290</sup> The wavy cross-bar had the same variants.<sup>291</sup>

The plate under the wavy part is perforated in most items. In these, the shape of the openwork usually follows the wavy line of the upper cross-bar.<sup>292</sup> The fin had to be removed from the pierced items after casting.<sup>293</sup> However, this was not done in every case as can be seen, for example, in the find from Felgyő. There were some items where this openwork did not remain at all, because the surface was completely filled by the spilled metal during casting, which was not removed afterwards, either. The finishing of this part required greater knowledge and shaping skills from the craftsman of the masterpiece.<sup>294</sup> The products of goldsmiths of poorer skills, therefore, often had casting defects.<sup>295</sup> Some items show that no post-casting work was carried out on them. In the case of the find from Troyan (*fig. 20. 5*), for example, it can be seen well that the casting fin still connects the wavy rim and the terminal of the cross-bar dividing the perforated part into two halves as it was not filed out after casting.<sup>296</sup> A similar defect can be observed on the item from Knin, where the wavy profile of the openwork was reduced to three oval holes (*fig. 17. 9*), and on the find from Kladovo it was replaced by two holes (*fig. 19. 1*). All this illustrates well how Type III developed. An isolated pair of jewellery from Serbia<sup>297</sup> represents a transition between Types II and III. One of the items has a clearly visible curved perforation, but its pair is not pierced through due to a casting defect that was not filed out subsequently (*fig. 19. 7*). The bar

<sup>283</sup> *Cat. Brno 2014* 404.

<sup>284</sup> *Table 2. 44, 46–47, 49–51, 61–62, 67.*

<sup>285</sup> *Table 2. 32, 38, 45, 58, 67–69.*

<sup>286</sup> For further such pieces see *Table 2. 52, 57, 66.*

<sup>287</sup> *Table 2. 44, 51–52, 61.*

<sup>288</sup> *Table 2. 45–47, 50, 59, 62.*

<sup>289</sup> *Table 2. 32, 49, 66, 68–69.*

<sup>290</sup> *Table 2. 38, 57–58, 67.*

<sup>291</sup> In general, those pieces where the lower arch was decorated with a beaded wire (e.g., *Table 2. 44, 50–51*), also had beaded wire on the edge of the wavy arch, while in the case of those items where the lower arch was simpler, a similar tendency can be observed in terms of the wavy arch, as well.

<sup>292</sup> *Table 2. 32, 39, 44–48, 50–52, 58, 61–65.* The items from Felgyő and Banat were the same.

<sup>293</sup> *Table 2. 46.*

<sup>294</sup> For the difficulties of contemporary traditions of casting, *Bíró – Szenthe 2011; Szenthe 2012.*

<sup>295</sup> *Table 2. 32.*

<sup>296</sup> The find from the site Trojan bears numerous marks of use. *Welkow 1942* 48.

<sup>297</sup> *Ćorović-Ljubinković 1951* 52; *Table 2. 48.*

along the central vertical axis of the perforated part can also be considered as the continuation of the pendant connected to the lower arch. Its design is also varied. There are items where the decorative ball<sup>298</sup> or balls placed on top of each other<sup>299</sup> can be observed at the end of the cross-bar. In the case of less carefully finished pieces of jewellery, this part is just tapered<sup>300</sup> or simply rounded.<sup>301</sup> As for the find from Felgyő, the craftsman did not even bother to shape this part in this way. Among those pieces where the perforation was not filed out as described above and only a rounded triangular hole remained on each side of the central axis, we could also identify a variant where the dividing bar was, in fact, the organic continuation of the pendant and its sides were emphasised by vertical rows of beads (*fig. 19. 15, fig. 20. 4*).<sup>302</sup>

The prismatic pendant ornament at the bottom was covered with cone-shaped (e.g., the artefacts from Banatska Palanka)<sup>303</sup> or trapezoidal ribs (e.g., the jewellery from Felgyő).<sup>304</sup> Less frequently, this part was also covered with beaded decoration, as in the case of the item from Pančevo and Banatska Palanka (*fig. 13. 7, fig. 14. 2–3*).<sup>305</sup> Most often, the ribs were arranged in three or four rows, one below the other,<sup>306</sup> on the four side planes of the pendant. At the bottom of the prismatic pendant, there was usually a globular ornament,<sup>307</sup> or a thin cylindrical closure as can be seen on the jewellery from Szeged.<sup>308</sup>

Comparing the dimensions of finds classified in Type II with those of the objects belonging to Type I, we can clearly perceive that the items of the latter group are larger and wider. The items belonging to Type II were 2.7–5.5 cm high and 1.9–3 cm wide. The majority of the finds within this size range were higher than 3.4 cm and wider than 2.5 cm. It is clearly apparent that – as discussed above – the general height (2.3–3.3 cm) and width (1.5–1.7 cm) of the 9th-century pieces increased towards the end of the century. Apparently, this tendency was followed by the cheaper imitations belonging to Type II. The size of the pieces of jewellery forming group II, therefore, must have been the same as contemporary precious metal items that were put together from several elements.

This type was uniformly dated to the 10th century by researchers.<sup>309</sup> Nevertheless, for some finds, a later date was also considered possible by experts.<sup>310</sup> In the case of the Köttlach cemetery, which also contained 9th-century grave goods, for example, the 10th-century date is more likely. This is confirmed by other finds from the site dated to the 10th century with certainty.<sup>311</sup> The survival of the type to the 11th century is supported, among other things, by the item from Felgyő, which is the only piece of this type of jewellery from the Carpathian Basin that can be dated on the basis of find-circumstances. Based on relevant grave goods, the find from Felgyő can probably be dated to the 11th century.<sup>312</sup>

<sup>298</sup> *Table 2. 52, 57.*

<sup>299</sup> *Table 2. 44–45, 47–48, 50, 51, 61–62.*

<sup>300</sup> *Table 2. 58, 68–69.* The find from Pančevo/Banatska Palanka can also be classified here.

<sup>301</sup> *Table 2. 46, 52.*

<sup>302</sup> *Table 2. 59, 67.*

<sup>303</sup> *Table 2. 32, 36, 38, 44, 47, 50–51, 57, 61, 67, 69.*

<sup>304</sup> *Table 2. 42, 45–46, 48–49, 52, 58, 62, 68.*

<sup>305</sup> For another parallel, see *Table 2. 59.*

<sup>306</sup> It was only the pieces decorated with beaded wire, as well as the item from Köttlach and one of the stray finds from Northern Bulgaria that had more rows than this. *Table 2. 32, 59, 67.*

<sup>307</sup> *Table 2. 32, 38–39, 42, 44, 46–51, 57–59, 61, 67–69.* The items from Banat also had globular decorations.

<sup>308</sup> *Table 2. 36, 52, 66.* The tapering end is a unique phenomenon, *Table 2. 62.*

<sup>309</sup> *Ćorović-Ljubinković 1951 50–51; Ercegović-Pavlović 1980 89; Perišić et al. 1981 90; Mesterházy 1991 145; Petrinc 2009 266–267.*

<sup>310</sup> *Miletić 1963 131–132; Janković – Janković 1990 97; Bálint 1991 246; Živić 2003 194; Grigorov 2007 36.*

<sup>311</sup> *Pittioni 1943 15; Giesler 1980.*

<sup>312</sup> *Mészáros 2014.*



The distribution area of Type II, however, significantly differs from that of Type I. Type I was prevalent in the Central Danube Region as early as the 9th century and after disappearing there in the 10th century, it became fashionable in the territory of present-day Poland, Russia, and Ukraine. Conversely, Type II was clearly related to the Balkans (*figs 21–22*). The main focus of the use of the jewellery was in the Lower Danube Region. The northernmost item of this type comes from 10th-century Köttlach (*fig. 17. 5–6*). This piece may also reflect in which direction the jewellery spread, as its design can be perfectly compared with the latest items known from the Central Danube Region, namely the pair of jewellery from Ducové (*fig. 16. 11–12*).<sup>313</sup> Many elements of the Ducové jewellery can also be observed on better quality pieces of the type: for example, a beaded decoration on the top of the wavy upper arch,<sup>314</sup> or a spherical ornament placed on the central axis of the pierced part below the cross-bar. In this way, it can be traced well how the motifs observed on finds soldered together from several pieces were passed to simpler, cast pieces.

### 2.6. Characteristics of Type III

The items in this group are usually cast from a copper alloy and represent the most simplified versions of this type of object.<sup>315</sup> In the case of these earrings, even the middle wavy plate was abandoned, which was still present on the pieces of Type II.

The collected parallels are characterised by a round upper and an oval lower arch. The element closing the two ends of the lower arch is crudely shaped in almost every piece. In most cases, we can observe there an element similar to a spherical decoration (for example, in Batina and Zvonimirov, *fig. 13. 5*, *fig. 14. 1*), but a ribbed closure reminiscent of a disc-shaped decoration also occurs (in Halimba) (*fig. 13. 2–3*). However, the wavy element on the inner side of the lower arch is cast as one piece and no perforation is visible on it. The place of the bar that the former openwork had is only signalled by an elongated oval bulge in the item from Halimba.<sup>316</sup> The lines of the lower arch and frame are marked by a thickened rim, as can be seen on the pieces of jewellery from Batina and Zvonimirovo.

The design of the cylindrical pendant is also simpler and cruder than those of the types discussed above. Trapezoidal ribs can still be observed on the item from Halimba, but in many other finds, this part was simplified to an irregular, notched form, like in the pieces discovered in Zvonimirovo (*fig. 14. 1*) and at the site Bosanska Gradiška (*fig. 19. 12*). This feature, as I mentioned above, is not only typical of Type III but as the find from Felgyő illustrates, some of the artefacts classified as Type II have similar characteristics, too.

In addition to the design of the objects, their dimensions are also similar in many respects to those of the finds belonging to Type II. The finds classified here range from 3.7 to 4.5 cm in height and from 2.6 to 4.3 cm in width. In terms of the date of the object type, we can again describe similar characteristics to what has been mentioned about Type II. The finds can be dated to the 10th and 11th centuries. They may have developed somewhat later than the finds belonging to Type II. However, they must have already existed in the middle third of the 10th century – as the coins of Hugh of Provence (Arles) discovered in the Halimba burial confirm<sup>317</sup> – and remained in use to the first half of the 11th century. The existence of this type of object in the latter period is also supported by the find-circumstances of the Slavonian pieces, especially the chronology of the cemetery discovered

<sup>313</sup> *Cat. Brno 2014* 404.

<sup>314</sup> In the case of Type II, it often consisted of beaded decoration arranged in a triangular shape. *Table 2. 47–48, 51–52*.

<sup>315</sup> The only exception in this respect is the pair of jewellery found in Zvonimirovo presented above. These items are considered to be silver alloys by their publisher.

<sup>316</sup> The preceding phase of its development is represented by the defective piece of a stray find from Serbia (*fig. 19. 7*).

<sup>317</sup> *Coupland – Gianazza 2015* 316.

in Zvonimirovo.<sup>318</sup> The find from the site at Bosanska Gradiška can also be dated to the late 10th and early 11th centuries.<sup>319</sup> This is suggested by the age of other pendants,<sup>320</sup> the animal-headed bracelet,<sup>321</sup> and costume fittings with pendants<sup>322</sup> discovered together with this type of jewellery. A similar age was assumed by Serbian researchers in connection with the find from the site Grocka.<sup>323</sup>

This object Type is rarer compared to Type II. Based on the currently known finds, its main distribution area was the territory of former Pannonia<sup>324</sup> and the neighbouring territories (*fig. 22*).<sup>325</sup> The analogues of the artefact from Bosnia discovered further away can also be found among the 10th- and 11th-century finds of Slavonia and Transdanubia.<sup>326</sup>

### 2.7. Overall assessment of the type of object

The group finds presented above was not widespread in the 10th-century Carpathian Basin but was certainly more common than jewellery decorated with a crescent on its inner arch. This frequency was, however, due to the relatively high number of finds discovered in Slavonia and the Banat. At the same time, it is important to take into account that their number is still below ten pieces. It demonstrates well that in the 10th-century Hungarian Principality, and subsequently in the early Hungarian Kingdom, the use of this type of object was very sporadic. It is enough to compare them with the numerous pieces of ring jewellery made of twisted wire, crescent-shaped pendants, or S-terminalled lockrings.<sup>327</sup> Even when compared with the fashion of other South-East European objects – such as, pendants decorated with four spheres or a bunch of grapes – in the Carpathian Basin, the number of the investigated objects is insignificant (*fig. 15*).

Despite the local marginality of this 10th-century artefact, the background of its development offers a number of interesting phenomena. In spite of the fact that the 10th-century items reached the Carpathian Basin from the south-east, (to the best of my knowledge) the object Type Itself is not of Byzantine origins, although the technological solutions that can be observed on the finds are closely associated with Byzantine jewellery craftsmanship.<sup>328</sup> I have not been able to find similar artefacts or pieces of jewellery, which could be regarded as the antecedents of the object Type in terms of design, either in scholarly literature or in the Byzantine archaeological material known to me. The earliest pieces are represented by the finds of the Central Danube Region. The area bordered by the former Carolingian Pannonia and the Moravian Principality is where the earliest pieces of this jewellery type emerged. These pieces categorised as Type I were precious metal items and were composed of several parts indicating advanced goldsmithing skills. Their fashion is fundamentally connected to the contemporary elite. Among the early pieces, there were no simple cast versions or parallels made of bronze. Type I later spread northwards. Its presence in Poland, as well as the early Russian finds and treasure hoards testify that this jewellery type still existed after the political transformation of the Central Danube Basin. It survived to the turn of the millennium as an object type worn by the local elite in the North (*fig. 21*). After the Hungarian Conquest, its fashion ended in the wider region

<sup>318</sup> Tomičić 1997; Tomičić 2019.

<sup>319</sup> Korošec-Vračko 1942 280.

<sup>320</sup> For their analogue, Tomičić 1997 99–100.

<sup>321</sup> The closed animal-headed bracelet belongs to Sub-Type 3c in the classification established by László Kovács, and can be dated to the first half of the 11th century, Kovács 1994 136.

<sup>322</sup> On their chronology more recently, Tomičić 2019.

<sup>323</sup> Bajalović – Hacı-Pešić 1984 58.

<sup>324</sup> For the identification of the area, Filipec 2015 17–20.

<sup>325</sup> The find from Grocka was discovered on the border of the Banat, on the right bank of the Danube, between Smederovo (Szendrő, Serbia) and Belgrade (Nándorféyhérvár, Serbia).

<sup>326</sup> Korošec-Vračko 1942.

<sup>327</sup> Horváth 2016 49–123; Kovács 2019 364–432.

<sup>328</sup> Žilina – Makarova 2008.

of its development. One of the latest such finds, which already bears some of the characteristics of Type II, was discovered in Ducové and can be dated to the late 9th or early 10th century.

The main distribution area of Type II was, however, the region of the Lower Danube. These are, without exception, pieces made of bronze. In terms of their size and design, they can be associated with the above-mentioned finds from Ducové (*fig. 16. 11–12*). They are also larger than the earlier 9th-century pieces of jewellery made of precious metal, and they are most closely related to this find in terms of their design, as well. The pieces of jewellery found in the Carpathian Basin (the northernmost being the find from Felgyő, as well as the items from Pančevo and Banatska Palanka discovered to the east of it), are late items and have southern connections. The closest parallels of the find from Felgyő can be found among the Serbian stray finds,<sup>329</sup> while the pieces from the Banat are most closely related to finds discovered at the sites of Mitrovica, Vinča, and Felix Romuliana.<sup>330</sup> All this also demonstrates that, according to our present knowledge, the object type did not cross the Carpathian Basin when its fashion spread from the North to the South. Probably the transport corridor may have been the North Alpine Region, which is also suggested by finds from Köttlach classified as Type II.<sup>331</sup> The fact that this transport corridor was already extant in the 9th century is confirmed by several other artefacts, such as the 9th-century find from Ptuj (*fig. 17. 7–8*),<sup>332</sup> also published by Béla Szőke, and the item from Zadar (*fig. 17. 10*).<sup>333</sup> Preceding the Hungarian settlement, Transdanubia was an integral part of this network, as demonstrated by the analysis carried out by Béla Miklós Szőke.<sup>334</sup> This system of relations between the North and South is also testified to by the cemetery of the site Bagrusa in Bosnia, which contains northern finds.<sup>335</sup> The object type thus most likely spread from here to the South and became prevalent to the Lower Danube Region (*fig. 22*). This type of jewellery is not the only example of the spread of fashion from the North to the South. It may be enough to refer to the observations made by Károly Mesterházy, who pointed out in connection with the Kiev-Volhynian-type pendants that although “certainly going back to Byzantine precedents, the Kiev-Volhynian-type earrings developed in Ukraine, or, more precisely, the settlement area of the Polianians (since they do not occur anywhere else) in the late 9th and early 10th centuries”.<sup>336</sup> It was from there that they travelled southwards. In this way, they arrived in the Carpathian Basin from the North, and from there, they spread further to the south and became fashionable in the Balkans, as well.

A Type III is connected to a local group based on currently available data. This type of jewellery was common in the territory of former Pannonia and the adjacent parts of Bosnia (*fig. 22*). Although it most likely developed somewhat later than Type II, it was in use between the middle of the tenth and the first half of the 11th century. In other words, its fashion was contemporary to that of Type II.

Concerning Types II and III, it should be emphasised again that the design sequences of these types did not stop with their development, as further variants emerged along the Lower Danube. Such are the pieces where, instead of the four-pronged pendant, a spherical ornament was soldered to the outer edge of the lower arch,<sup>337</sup> or where the manufacturers omitted the aforementioned wavy

<sup>329</sup> *Table 2. 52; Kovačević 2003 57.*

<sup>330</sup> *Table 2. 38, 45–46.*

<sup>331</sup> *Pittioni 1943 15; Mesterházy 1991 145.*

<sup>332</sup> *Szőke 1962 50; Korošec 1966 155.*

<sup>333</sup> *Tomičić 2003 153–154.*

<sup>334</sup> *Szőke 2018 302–303; Szőke 2020 73, 226–227, 437.*

<sup>335</sup> *Žeravica 1986.* For its more recent interpretation, *Tomičić 2010.*

<sup>336</sup> *Mesterházy 1994 229.*

<sup>337</sup> The item discovered in grave no. 2 of the mound burial no. 3 at site Skalica (Szokolca, Slovakia) already had a spherical ornament on the lower arch instead of a four-pronged pendant with granulation (*fig. 20. 13–14*), *Budinský-Krička 1959 134–135.*

inner arch.<sup>338</sup> Nevertheless, in connection with these unique features, it is worth taking into account the fact that the craftsmen who prepared the pieces of jewellery studied by us were certainly able to make many other designs. Moreover, they must have even produced them. Therefore, the items discussed above separately may as well have been made by the same craftsman.<sup>339</sup>

### Summary

From the analysis of the two types of jewellery presented above, we can also draw some general conclusions concerning the 10th- and 11th-century relations between the Carpathian Basin and South-Eastern Europe. In conclusion of my study, I would now like to discuss these in brief.

The distribution of the finds in the Carpathian Basin corresponds to the general feature that László Török observed when examining a completely different tradition.<sup>340</sup> The role of a given cultural region as a transferor and the other as a recipient is not an exclusive and one-sided process. The recipient – in this case, the population of the 10th-century Hungarian Principality and the early Árpáadian Hungarian Kingdom – did not take over everything from the local population and neighbouring regions in terms of jewellery culture, either. Relatively few of the simple mass-produced goods, including cast bronze pieces, coming from the Balkans have actually become fashionable in the Carpathian Basin. In most cases, only a few pieces were left of them. The jewellery types presented above belong to this “unsuccessful” category. Their presence is only evidenced by few data, and moving farther away from the southern contact area, fewer and fewer pieces have remained of them. Their sporadic presence does not justify the kind of interpretive framework that many researchers referred to before, namely that they would be markers of the so-called (actually, never-existing) “Bijelo Brdo culture”.

The relations of the types of objects with South-Eastern Europe in the 10th century does not necessarily imply that their development was associated with the Balkans or directly with Byzantium. This presupposition could also be confirmed by identifying parallels of the items decorated with crescent-shaped ornaments on the inner arch at Byzantine sites. Finds with a wavy inner arch and a four-pronged pendant did not have such connections. In the case of these pieces, we found that they evolved in the Central Danube region (partly in the Carpathian Basin) in the 9th century. Subsequently, their fashion ended there because of the local shifts of power that took place at the end of the century. At the same time, they became popular in the Balkans due to the network of relations existing to the west of the Carpathian Basin across the Eastern Alps in the 10th and 11th centuries. Their secondary fashion there had little impact on the Carpathian Basin in the end.

The find from Himód also highlights that this Eastern Alpine cultural channel existing in the 10th and 11th centuries transmitted cultural goods not only from the North to the South but also in the opposite direction. The Himód pendant is not only the westernmost example of the type of jewellery adorned with a crescent on its inner arch but also suggests that it could have hardly originated directly from the Balkans. The best analogues of the Himód find are known from Slovenian cemeteries. The close connection with them is well perceptible.<sup>341</sup> This piece of jewellery found in the cemetery testifies to the existence of connections with the Eastern Alpine Region instead of South-Eastern Europe. The cultural channel of which Transdanubia was also an integral part in the 9th century did not disappear in the 10th century, either. Its focal area only shifted to the west.

<sup>338</sup> There is evidence for the lack of a wavy inner arch not only among cast items discovered along the Lower Danube but also in the North. E.g., Holiare grave no. II (*Točik* 1968 116); Roztoky (*Sláma* 1977 137) Zákolany (*Sláma* 1977 177).

<sup>339</sup> For a similar line of reasoning, *Mesterházy* 1991 145.

<sup>340</sup> *Török* 2011.

<sup>341</sup> *Unger* 2016 30–31.

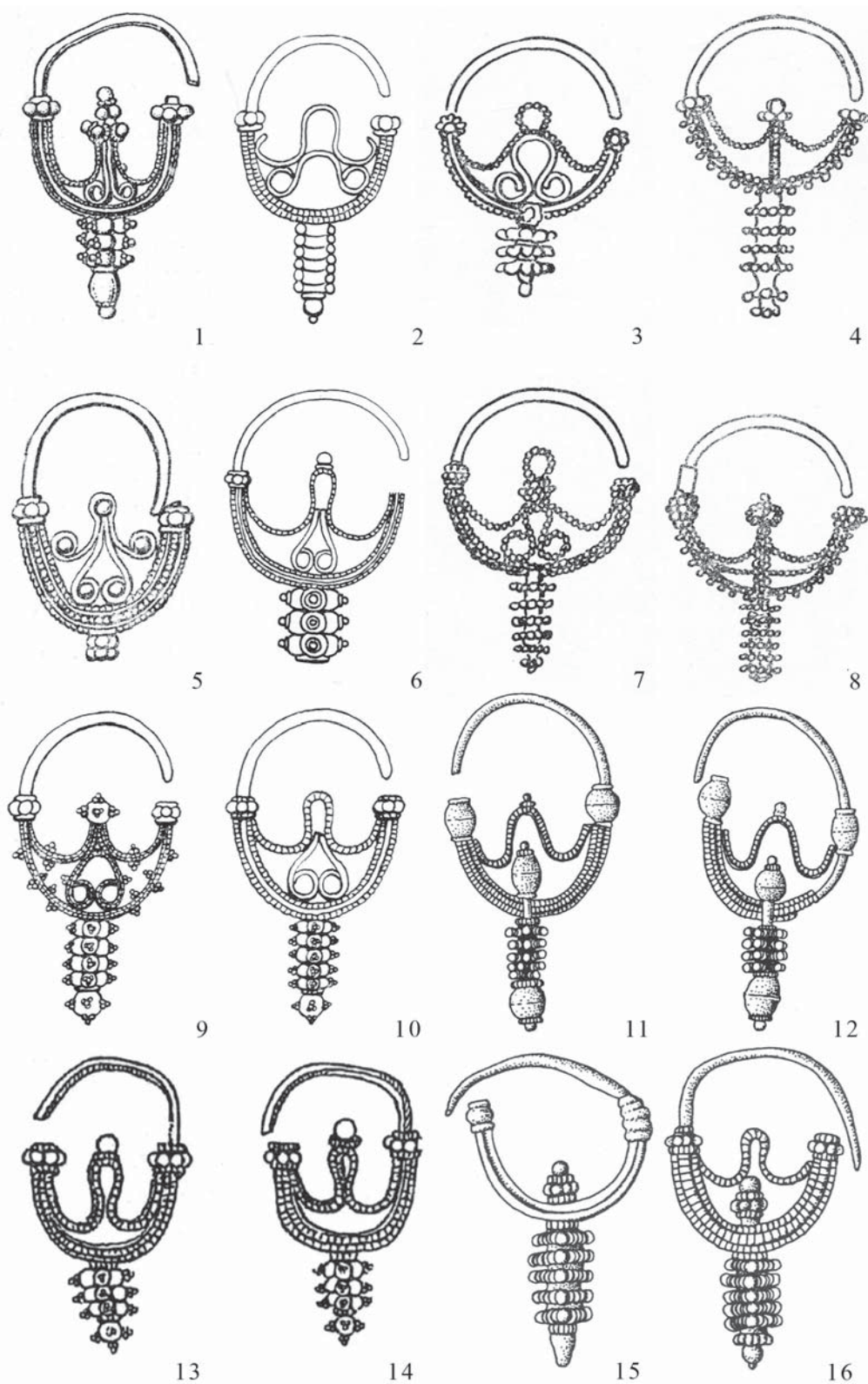


Fig. 16. Crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant. 1. Breclav-Pohansko; 2. Dolní-Věstonice-Pisky, Grave 742/57; 3. Gostyň; 4. Obra Nowa; 5. Kouřim, Grave 136; 6. Lanžhot, Grave 6; 7. Zalesie; 8. Zawada Lanckorońska; 9. Staré Mesto „Na valách”, Grave 103; 10. Staré Mesto „Na valách”, Grave 40/51; 11–12. Ducové (Ducó), Grave 1460; 13–14. Uherské Hradiště-Sady, Grave 87/60; 15–16. Holiare (Gellér), Grave II (1–9. after *Dostál 1965*; 10. after *Dostál 1966*; 11–12, 15–16. after *Hanuliak 2004*; 13–14. after *Galuška 1996*)

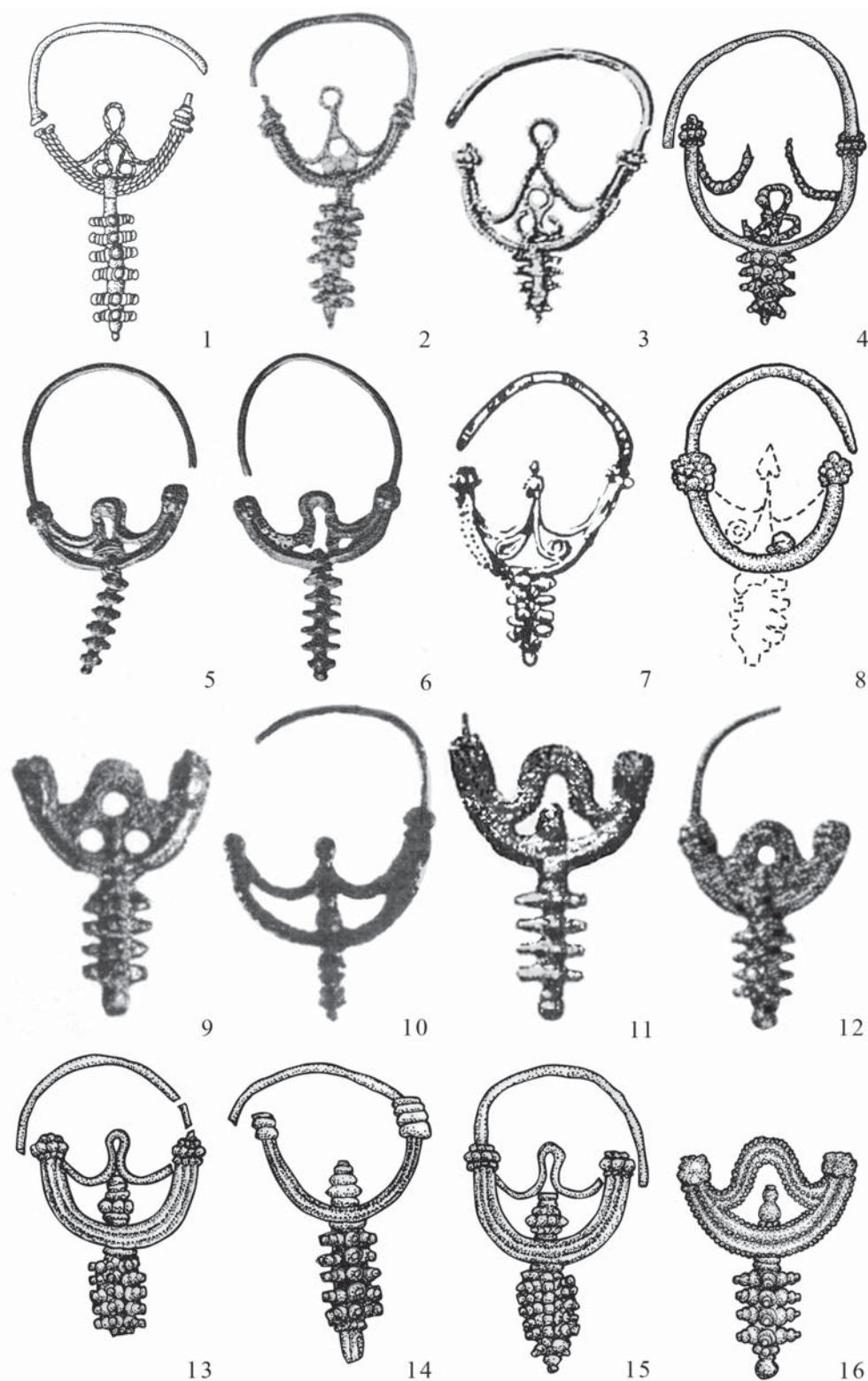


Fig. 17. Crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant. 1–2. Stray finds from Lipová-Ondrochov (Ondrohó); 3–4. Borovce (Vágbori), Grave 26; 5–6. Köttlach; 7–8. Ptuj, Grave 350; 9. Knin-Plavno; 10. Zadar-Sv. Petar Stari; 11. Felix Romuliana; 12. Grocka-ul. Sava Kovačevića 8; 13–15. Holiare (Gellér), Grave II; 16. Stray find from the region Targovishte (Bulgaria) (1. after *Hanuliak 2004*; 2. after *Točík 1971*; 3–4. after *Štaššiková – Štukovská 2001*; 5–6. after *Pittioni 1943*; 7. after *Dostál 1965*; 8, 13–16. drawings: ©Zsóka Varga; 9. after *Karaman 1940*; 10. after *Tomičić 2003*; 11. after *Živić 2003*; 12. after *Bajalović – Hacı-Pešić 1984*)

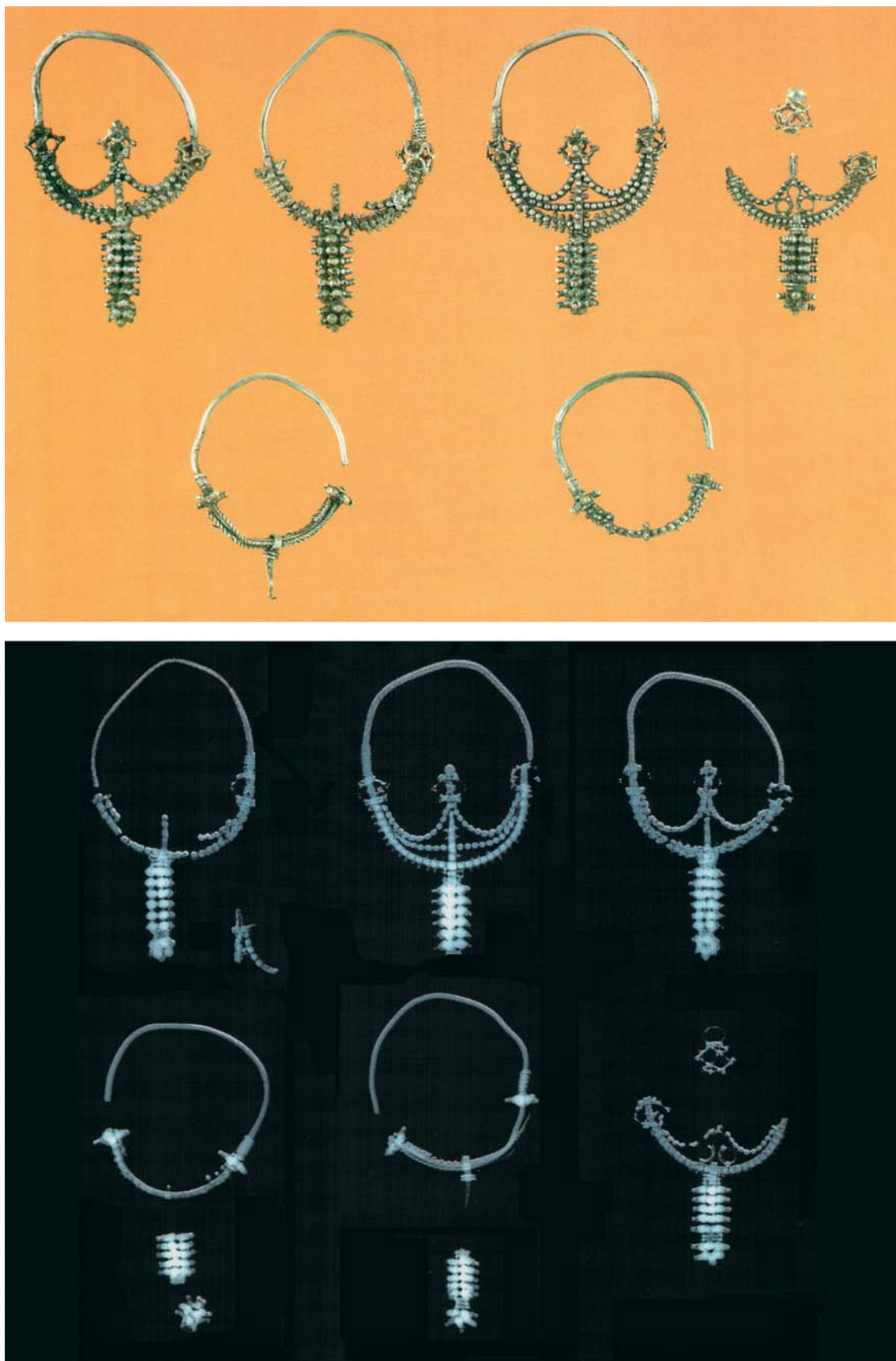


Fig. 18. Photograph and X-ray photo of some jewels found as part of the treasure from Zawada Lanckorońska (after *Zoll-Adamikowa – Dekówna – Nosek 1999*)

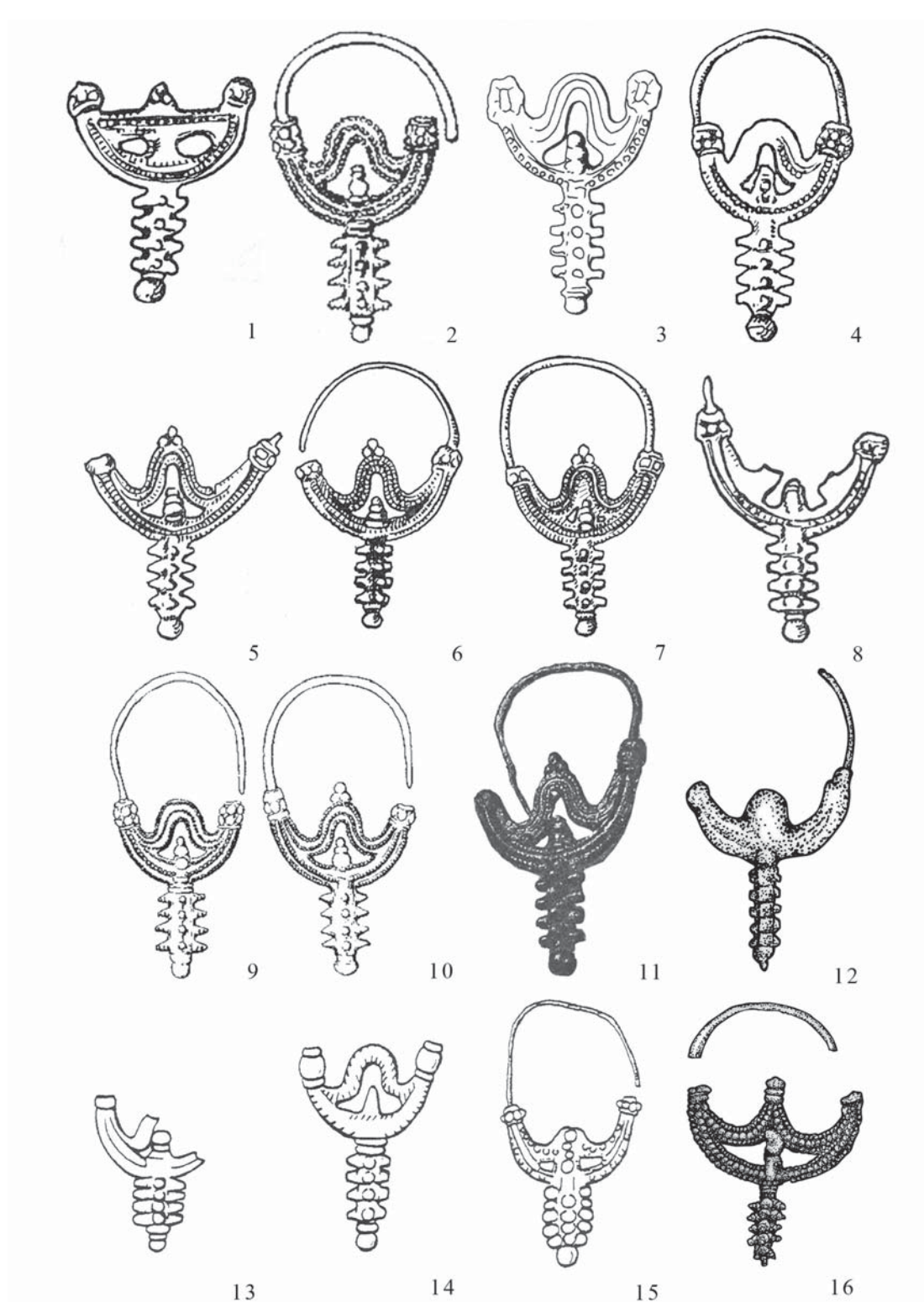


Fig. 19. Crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant. 1. Kladovo; 2. Kostolac; 3. Mačvanska-Mitrovica; 4. Vinča; 5. Piece from the territory of present-day Serbia, near the Danube between Ritopek and Dubravice, exact location unknown; 6–11. Pieces from the territory of present-day Serbia, exact location unknown; 12. Bosanska Gradiška-Junuzovci; 13–14. Balik; 15. Batin-2; 16. Galiče, Grave 27 (1, 4–8. after *Čorović-Ljubinković 1951*; 2. after *M. Janković – Janković 1990*; 3. after *Ercegović – Pavlović 1980*; 9–10. after *Bajalović – Hacı-Pešić 1984*; 11. after *Kovačević 2003*; 12, 16. drawings: ©Zsóka Varga; 13–15. after *Grigorov 2007*)





Fig. 20. Crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant. 1. Rujno; 2–3. Središe; 4. Stray find from Northern Bulgaria; 5. Troyan; 6. Garlica-Ostrov; 7. Kupinovo (Kölpény); 8. Transitional type from Preslav: while the wavy decorative element on the inner edge of the lower arch is missing, the four-pronged prismatic pendant can be seen; 9–11. Kijev; 12. Gnezdovo; 13–14. Skalica (Szakolca) Barrow 3, Grave 2 (1–4, 6. after *Grigorov 2007*; 5. after *Welkow 1942*; 7–11, 13–14: drawings: ©Zsóka Varga; 12. after *Petruhin et al. 1996*)

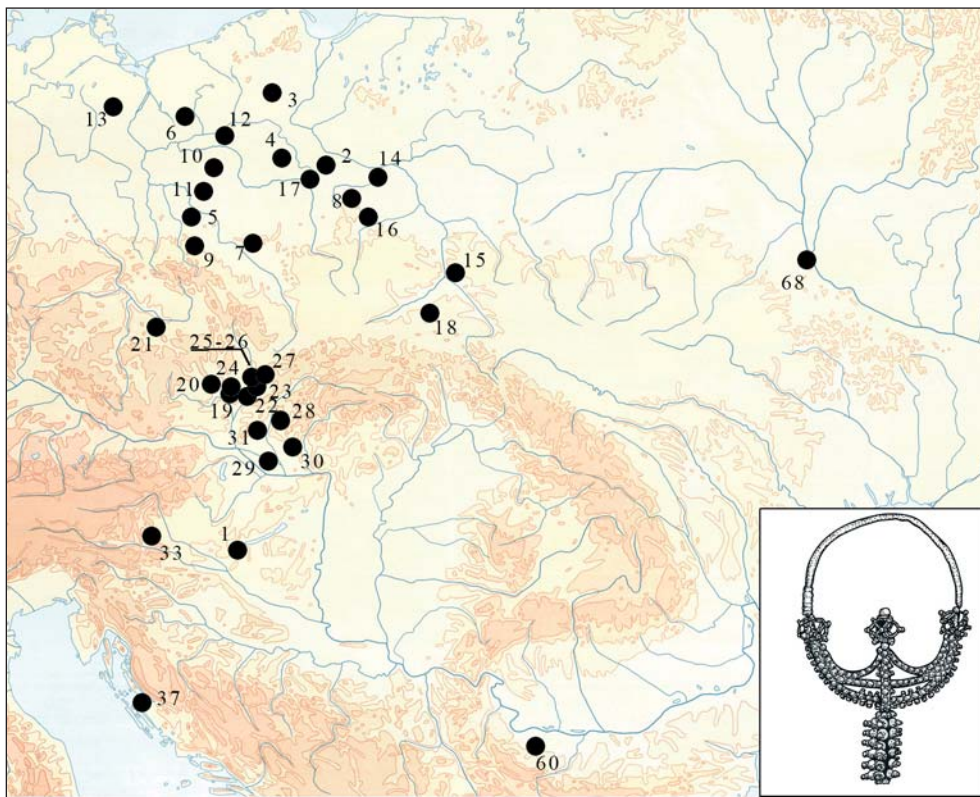


Fig. 21. Distribution of the Type I of crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant in the 9th century, for numbers see *Table 2* (Map: ©Péter Langó)

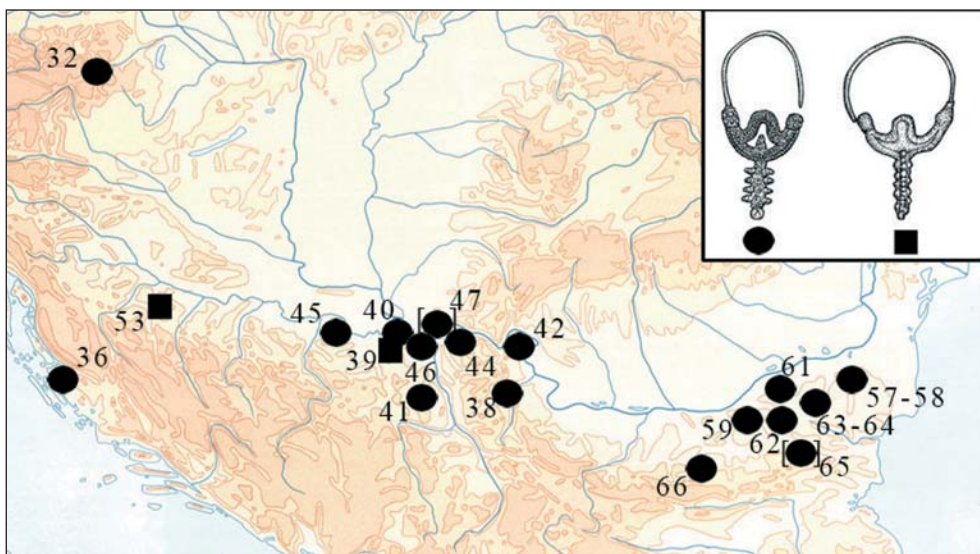


Fig. 22. Distribution of the Type II and Type III crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant outside the Carpathian Basin, for numbers see *Table 2*, rectangle: Type II; circle: Type III (Map: ©Péter Langó)

## REFERENCES

- Acsádi – Nemeskéri 1958* Gy. Acsádi – J. Nemeskéri: La population de Székesfehérvár Xe et Xle siècles. *AnnHN* 51 (1958) 493–564.
- Aleksova 1966* B. Aleksova: Prosek – Demir Kapija Slovenska nekropola i slovenske nekropole u Makedoniji. *Dissertationes / Arheološko društvo Jugoslavije = Société archéologique de Yougoslavie* 1. Skopje – Beograd 1966.
- Aleksova 1970* B. Aleksova: Arheološki ostatici iz slovenskog perioda u Makedoniju od IX–XIV. stoleća, in: W. Hensel (ed.): *I Międzynarodowy Kongres Archeologii Słowiańskiej Warszawa 14–18 IX 1965*, T. 5. Wrocław – Warszawa – Kraków 1970, 92–103.
- Bajalović – Hacı-Pešić 1984* M. Bajalović – M. Hacı-Pešić: Накит VIII–XVIII века у Музеју града Београда. Београд 1984.
- Bakay 1966* K. Bakay: Gräberfelder aus den 10.–11. Jahrhunderten in der Umgebung von Székesfehérvár und die Frage der fürstlichen Residenz I. *Alba Regia* 6–7 (1966) 43–88.
- Bakay 1978* K. Bakay: Nonfoglalás- és államalapításkori temetők az Ipoly mentén (Gräberfelder an der Eipel aus der Zeit der ungarischen Landnahme und Staatsgründung). *StComit* 6. Szentendre 1978.
- Bálint 1968* Cs. Bálint: Nonfoglalás kori sírok Szeged-Öthalmon. (Могилы из эпохи завоевания родины на холме „Етхалом“ близ Сегеда). *MFMÉ* (1968) 47–89.
- Bálint 1991* Cs. Bálint: Südungarn im 10. Jahrhundert. *StudArch* 11. Budapest 1991.
- Barački – Brombolić 1997* С. Барачки – М. Бромболић: Степен истражености средњовековних локалитета на подручју јужног Баната. *RVM* 39 (1997) 209–228.
- Bikić 2010* V. Bikić: Vizantskij nakit u Srbiji. *Modeli i naslede*. Beograd 2010.
- Bíró – Szenthe 2011* Cs. Bíró – G. Szenthe: Öntéstechnikai vizsgálatok késő avar kori bronz-tárgyakon (Investigations of casting techniques of bronze artefacts from the late avar period), in: E. Tóth – I. Vida (eds): *Corolla Museologica Tibor Kovács dedicata. Libelli Archaeologici Ser. Nov. no. IV*. Budapest 2011, 155–174.
- Bitenec – Knific 2001* P. Bitenec – T. Knific: Od Rimljanov do Slovanov. *Predmeti*. Ljubljana 2001.
- Bitrakova 1988* В. Битракова: Ископувањта на Голем град во 1980 година. *МасАА* 9 (1988) 203–210.
- Bobčeva 1982* Л. Бобчева: Ранносредновековни български селища и некрополи по черноморския бряг, in: Георги Бакалов (Hrsg.): *Средновековна България и Черноморието: Сборник доклади от научната конференция Варна – 1980 / Das mittelalterliche Bulgarien und das Schwarzmeergebiet*. Варна 1982, 99–109.
- Bobčeva 1984* Л. Бобчева: Старобългарски християнски некропол при с Крагулево Толбухински окръг. *INMVarna* 35 (1984) 53–58.

- Boljunčić 1997* J. Boljunčić: Antropološka analiza ranosrednjovjekovnog groblja Zvonimirovo-Veliko polje (Anthropological analysis of the medieval-graveyard Zvonimirovo), in: Ž. Tomičić: Zvonimirovo i Josipovo groblja starohrvatskoga doba u Virovitičko-podravskoj županiji. Zagreb – Virovitica 1997, 53–61.
- Boljunčić 2007* J. Boljunčić: DNA analysis of early mediaeval individuals from Zvonimirovo burial site in Northern Croatia: Investigation of kinship relationships by using multiplex system amplification for short tandem repeat loci. *Croatian Medical Journal* 48 (2007) 536–546.
- Bóna 1986* I. Bóna: Daciától Erdőelvéig. A népvándorlás kora Erdélyben, 271–896. (Von Dazien bis Erdőelve), in: B. Köpeczi (ed.): Erdély története I. A kezdetektől 1606-ig. Budapest 1986, 203–234, 575–582.
- Bosselmann-Ruickbie 2011* A. Bosselmann-Ruickbie: Byzantinischer Schmuck des 9. bis frühen 13. Jahrhunderts. Untersuchungen zum metallenen dekorativen Körperschmuck der mittelbyzantinischen Zeit anhand datierter Funde aus Bulgarien und Griechenland. Wiesbaden 2011. <https://doi.org/10.29091/9783954908547>
- Budinský-Krička 1959* V. Budinský-Krička: Slovanské mohyly v Skalici / Slawische Hügelgräber in Skalica. Bratislava 1959.
- Cat. Athens 2002* D. Papanikola-Bakirtzi (ed.): Everyday Life in Byzantium. Athens 2002.
- Cat. Bonn 2010* F. Daim (Hrsg.): Byzanz. Pracht und Alltag. Bonn 2010.
- Cat. Brno 2014* P. Kouřil (ed.): Great Moravia and the beginnings of Christianity. Brno 2014.
- Cat. Budapest 1996* I. Fodor – I. Nepper – L. Révész – M. Wolf (eds): „Őseinket felhozád...” A honfoglaló magyarság [‘You brought our ancestors up...’ The conquering Hungarians. Exhibition catalogue]. Kiállítási katalógus 1996. március 16 – 1996. december 31. Budapest 1996.
- Cat. Zagreb 2003* J. Balen (ed.): Na tragovima vremena: iz arheološke zbirke Mateja Pavletića (Tracing the times). Zagreb 2003.
- Chorvátová 2004* H. Chorvátová: K relativnej chronológii pohrebiska Staré Mesto v polohe Na valách. *AHN* 7 (2004) 199–236.
- Chorvátová 2007* H. Chorvátová: Horizonty byzantsko-orientálneho šperku na tzv. veľkomoravských pohrebiskách (Horizonte des byzantinisch-orientalischen Schmucks auf den sogenannten grossmährischen Gräberfeldern) in: Byzantská kultúra a Slovensko. Zborník štúdií. *ZbSNM – Archeológia, Supplementum* 2. Bratislava 2007, 83–101.
- Coche de la Ferté 1957* E. Coche de la Ferté: Bijoux byzantins de Chio, de Crète, de Salonique, in: Collection Hèlène Stathatos II. Les objets byzantins et post-byzantins. Strasbourg 1957, 12–56.
- Ćorović-Ljubinković 1951* M. Ђоровић-Љубинковић: Метални накит белобрдског типа. *Starinar* 2 (1951) 21–55.
- Ćorović-Ljubinković 1964* M. Ćorović-Ljubinković: Les influences de l’orfèverie byzantine sur la parure de luxe slave du IXe au XIIe siècle, in: Actes du XIIe Congrès International d’études byzantines (Ochride 10–16 sept. 1961) III. Belgrade 1964, 35–39.

- Coupland – Gianazza 2015* S. Coupland – L. Gianazza: The context of the Szeged-Öthalom find: Carolingian coins in Hungarian graves and comparable coins in other contemporary hoards, in: *Türk – Lőrinczy – Marcsik 2015* 301–324.
- Daim 2000* F. Daim: Byzantinische Gürtelgarnituren des 8. Jahrhunderts, in: F. Daim (Hrsg.): *Betrachtungen zu den mediterranen Beziehungen der spätdawarenzeitlichen Kunst im Karpatenbecken. Die Awaren am Rand der byzantinischen Welt. Studien zu Diplomatie, Handel und Technologietransfer im Frühmittelalter. Festschrift für István Bóna. Monographien aus Frühgeschichtliche und Mittelalterarchäologie 7.* Innsbruck 2000, 77–204.
- Deriziotis – Kougioumtzoglou 2005* Λ. Δεριζιωτης – Σ. Κουγιουμτζογλου: Η περραιβική Τριπολίτις κατά την παλαιохριστιανική και βυζαντινή εποχή. Το Καστρί Δολίχης του Δήμου Λιβαδίου. *Thessaliko Emerologio* 51 (2005) 33–64.
- Dončeva-Petkova – Ninov – Parušev 1999* Л. Дончева-Петкова – Л. Нинов – В. Парушев: Одръци. Селище от Първото българско царство 1. София 1999.
- Dostál 1965* B. Dostál: Das Vordringen der grossmährischen materiellen Kultur in die Nachbarländer, in: J. Macúrek (ed.): *Magna Moravia. Sborník k 1100. výročí příchodu byzantské mise na Moravu.* Praha 1965, 361–416.
- Dostál 1966* B. Dostál: *Slovanská pohřebiště střední doby hradištní na Moravě.* Praha 1966.
- Dymaczewska – Dymaczewski 1980* U. Dymaczewska – A. Dymaczewski: Resultats des fouilles archéologiques effectuées a Odarci. *SlAnt* 27 (1980) 145–167.
- Dymaczewski – Hilczerowna – Wislanski 1965* A. Dymaczewski – Z. Hilczerowna – T. Wislanski: Materiały z badań archeologicznych w Bulgarii w 1961 r. *SlAnt* 12 (1965) 235–286.
- Egry – Tomka 2000* I. Egry – P. Tomka: Himód, Káposztás kertek [Himód, Káposztás kertek], in: J. Kisfaludi (ed.): *Régészeti kutatások Magyarországon 2000.* Budapest 2003, 147–148.
- Eichert 2010* S. Eichert: Die frühmittelalterliche Grabfunde Kärntens. Die materielle Kultur Karantaniens anhand der Grabfunde vom Ende der Spätantike bis ins 11. Jahrhundert. Klagenfurt am Wörthersee 2010.
- Ercegović-Pavlovič 1980* Sl. Ercegović-Pavlovič: Les nécropoles romaines et médiévales de Mačvanska Mitrovica. *Sirmium* 12. Beograd 1980.
- Filipec 2003* K. Filipec: Prilog poznavanju trojagodnih sljepoočničarki u sjevernoj Hrvatskoj. *OA* 27 (2003) 561–568.
- Filipec 2015* K. Filipec: *Donja Panonija od 9. do 11. stoljeća.* Sarajevo 2015.
- Fodor 1984* I. Fodor: Rec. J. Giesler: Untersuchungen zur Chronologie der Bijelo Brdo-Kultur. Ein Beitrag zur Archäologie des 10. und 11. Jahrhunderts im Karpatenbecken. *PZ* 56/1 (1981). *ArchÉrt* 111 (1984) 124–125.
- Galuška 1989* L. Galuška: Výrobní areál velkomoravských klenotníků ze Starého Města–Uherského Hradiště. *PA* 80 (1989) 405–454.
- Galuška 1996* L. Galuška: Uherské Hradiště – Sady. Křesťanské centrum Říše velkomoravské. Brno 1996.

- Galuška 2013* L. Galuška: Hledání původu. Od avarských bronzů ke zlatu Velké Moravy / Search for the origin. From Avar bronze items to Great Moravian gold. Brno 2013.
- Galuška 2014* L. Galuška Jewellery and jewellery making in Great Moravia, in: *Cat. Brno 2014* 132–142.
- Gąssowska 1979* E. Gąssowska: Bizancjum a ziemia północno-zachodnio-słowiańska we wczesnym średniowieczu. Studium Archeologiczne. Wrocław 1979.
- Giesler 1980* J. Giesler: Zur Archäologie der Ostalpenraumes vom 8. bis 11. Jahrhundert. *AKorr* 10 (1980) 85–98.
- Giesler 1981* J. Giesler: Untersuchungen zur Chronologie der Bijelo Brdo-Kultur. Ein Beitrag zur Archäologie des 10. und 11. Jahrhunderts im Karpatenbecken. *PZ* 56/1 (1981) 4–167.
- Gorny und Mosch 145* Gorny & Mosch Auktionskatalog. Kunst der Antike. Katalog zur Auktion 145. 14. Dezember 2005. München 2005.
- Grigorov 2004* B. Григоров: Колекция ранноредновековни обеци от Северна България. *ArhSof* 45 (2004) 69–76.
- Grigorov 2007* B. Григоров: Метални накити от средновековна България. София 2007.
- Gunjača 1960* S. Gunjača: *Tiniensia Archaeologica – Historica – Topographica* II. *SHP* 7 (1960) 7–142.
- Gunjača 2009* S. Gunjača: *Tiniensia Archaeologica – Historica – Topographica*. Split 2009.
- Hanuliak 2004* Veľkomoravské pohrebiská. Pochovanie v 9.–10. storočí na území Slovenska. Nitra 2004.
- Hensel 1961* W. Hensel: Szkice wczesnodziejowe, cz II. *SlAnt* 8 (1961) 27–60.
- Horvat 1954* A. Horvat: O Sisku u starohrvatsko doba na temelju pisanih izvora i arheoloških nalaza. *SHP* 3 (1954) 93–104.
- Horváth 2014* C. Horváth: Győr és Moson megyék honfoglalás és kora Árpád-kori temetői és sírletei (Graveyards and Findings of County Győr and Moson from the Conquest Period and from the Early Árpadian Age). Szeged 2014.
- Horváth 2016* C. Horváth: Kora Árpád-kori temető Szombathely-Kisfaludy Sándor utca területén. S-végű karikaékszerek a kora Árpád-kori Nyugat-Dunántúlon [An early Árpád period cemetery in the area of Kisfaludy Sándor Street, Szombathely. S-terminalled lockrings in Western Transdanubia in the early Árpád period]. Szombathely 2016.
- Jakimowicz 1933* R. Jakimowicz: O pochodzeniu ozdób srebrnych znajdujących w skarbach wczesnohistorycznych. *WiA* 12 (1933) 103–131.
- Janković 1983* M. Јанковић: Неки подаци о изradi предмета од објених метала нс. Клучи Дунаба у IX–XI. веку. *ZRNM* 10/1 (1983) 137–152.
- Janković 2007* Ђ. Јанковић: Српско поморје од 7. до 10. столећа. Београд 2007.

- Janković – Janković 1990* M. Јанковић – Ђ. Јанковић: Словени у југословенском Подунављу. Београд 1990.
- Jelovina 1976* D. Jelovina: Starohrvatske nekropole na području između rijeka Zrmanje i Cetine. Split 1976.
- Jovanović 1976* V. Jovanović: Über den frühmittelalterlichen Schmuck von čečen auf Kosovo. *Balcanoslavica* 5 (1976) 123–145.
- Jovanović 1996* В. Јовановић: Прапорци у јужнословенским некрополама, пролог проучавању амулета (Bells in South Slav Necropolis, Contribution to Study of Amulets). *RVM* 37–38 (1996) 83–112.
- Jovanović – Vuksanović 1981* V. V. Jovanović – L. Vuksanović: Matičane, nécropole sud-slave de Xe et XIe siècle. *Inventaria Archaeologica* 25. Kosovo 1981.
- Jovanović – Vuksanović – Berić 1972* V. V. Jovanović – Lj. Vuksanović – N. Berić: New Finds from the Slavic Necropolis at Matičane near Priština. *Balcanoslavica* 1 (1972) 107–111.
- Kapelkova 2006* K. Kapelkova: Three Pairs of Earrings, in: R. Rousseva (ed.): National Museum of History. Sofia 2006, 87.
- Karger 1958* М. К. Каргер: Древний Киев. Москва – Ленинград 1958.
- Katsarova 2002* V. Katsarova: The Late Antique and Mediaeval Necropolis at Koprivlen, in: A. Bozkova – P. Delev (eds): Koprivlen I. Sofia 2002, 213–242.
- Kiss 1983* A. Kiss: Baranya megye X–XI. századi sírleletei (Die Grabfunde aus dem 10.-11. Jh. im Komitat Baranya). (helyette): *MHKÁS I.* Budapest 1983.
- Kóčka-Krenz 1982* H. Kóčka-Krenz: Some aspects of Polish Early Medieval metalworking. *Forvännen* 77 (1982) 38–48.
- Kóčka-Krenz 1993* H. Kóčka-Krenz: Bizuteria północno-zachodnio-słowiańska we wczesnym średniowieczu. Poznań 1993.
- Komar 2012* А. В. Комар: Киев и Правобережное Поднепровье, in: *Makarov 2012* 300–333.
- Korošec 1947* J. Korošec: Staroslovenska grobišča v severni Sloveniji. Celje 1947.
- Korošec 1966* P. Korošec: Problem der grossmährischen Elemente auf dem Gräberfeld auf der Burg von Ptuj. *SbNMP* 20 (1966) 179–189.
- Korošec 1976* P. Korošec: Arheološke raziskave ne Sevtih gorah nad Stolo. (Recherces archéologiques a Svete gore en amont de Stola). *AV* 25 (1976) 483–517.
- Korošec 1979* P. Korošec: Zgodnjesrednjeveška arheološka slika karantanskih Slovanov / Archäologisches Bild derkarantanschen Slawen im frühen Mittelalter. Ljubljana 1979.
- Korošec 1985* P. Korošec: Ungarische Elemente aus der Nekropole auf der Burg zu Ptuj. *AV* 36 (1985) 337–350.
- Korošec 1996* P. Korošec: Grob številka 355 z grajske nekropole na Ptuj. *PtujZb* 6/1 (1996) 405–415.

- Korošec 1999* P. Korošec: Nekropola na Ptujskem gradu. Ptuj 1999.
- Korošec – Korošec 1973* P. Korošec – J. Korošec: Svete Gore bei Bizeljsko in frühslawischer Zeit. *Balcanoslavica* 2 (1973) 125–136.
- Korošec-Vračko 1942* P. Korošec-Vračko: Rano srednje veki vni nalaz u Junuzovcima. *GZMS* 54 (1942) 272–280.
- Kougioumtzoglou 2002* Σ. Κουγιουμτζόγλου: Χάλκινο επαργυρωμένο σκουλαρίκι, in: Καθημερινή ζωή στο Βυζάντιο. Athens 2002, 435.
- Kovačević 2003* B. Ковачевић: Музеј града Београда 1903–2003. Београд 2003.
- Kovács 1985* L. Kovács: Über die Datierung der Grabfunde des 10. Jahrhunderts in Ungarn anhand der Arbeit von J. Giesler: Untersuchungen zur Chronologie der Bijelo Brdo-Kultur. *ActaArchHung* 37 (1985) 207–222.
- Kovács 1986a* L. Kovács: Honfoglalás kori sírok Nagytarcsán. II: A homokbányai temető-részlet. Adatok a nyéltámaszos balták, valamint a trapéz alakú kengyelek értékeléséhez (Landnahmezeitliche Gräber in Nagytarcsa. II: Gräberfeldabschnitt in der Sandgrube. Beiträge zur Wertung der Äxte mit Schaftlochklappen sowie der trapezförmigen Steigbügel). *CommArchHung* (1986) 93–121.
- Kovács 1986b* L. Kovács: Über einige Steigbügeltypen der Landnahmezeit. *ActaArchHung* 38 (1986) 195–225.
- Kovács 1989* L. Kovács: Münzen aus der ungarischen Landnahmezeit. Archäologische Untersuchung der arabischen, byzantinischen, westeuropäischen und römischen Münzen aus dem Karpatenbecken des 10. Jahrhunderts. *FontArchHung*. Budapest 1989.
- Kovács 1994* L. Kovács: Das früharpadenzeitliche Gräberfeld von Szabolcs (mit einem Beitrag von Imre Lengyel). *VAH* 6. Budapest 1994.
- Kovács 1997* L. Kovács: A kora Árpád-kori pénzverésről (Über die ungarischen Münzprägung in der frühen Arpadenzeit). *VAH* 7. Budapest 1997.
- Kovács 2011* L. Kovács: A magyar kalandozások zsákmányáról (Über die Beute der ungarischen Streifzüge). *Hadtörténeti Intézet és Múzeum Könyvtára*. Budapest 2011.
- Kovács 2019* L. Kovács: Magyarhomorog-Kónya-domb 10. századi szállási és 11–12. századi falusi temetője (A 10th-century cemetery belonging to a short-lived settlement and an 11th–12th-century village cemetery, both located on Magyarhomorog-Kónya-domb). *MHKÁS* 12. Szeged – Budapest 2019.
- Kramer 1994* D. Kramer: Bemerkungen zur Mittelalterarchäologie in der Steiermark. 2. Teil: Gräberfelder, Slawen und Bayern. *ZHVSt* 85 (1994) 25–72.
- Kürti 1983* B. Kürti: Bizánci kapcsolatok [Byzantine relations], in Gy. Kristó (ed.): *Szeged története I*. Szeged 1983, 269–270.



- Kürti 1994* B. Kürti: Régészeti adatok a Maros-torok vidékének 10–11. századi történetéhez (Archäologische Angaben zur Geschichte der Umgebung der Marosmündung in den 10–11-ten Jahrhunderten), in: G. Lőrinczy (ed.): A kőkortól a középkorig. Tanulmányok Trogmayer Ottó 60. születésnapjára / Von der Steinzeit bis zum Mittelalter. Studien zum 60. Geburtstag von Ottó Trogmayer. Szeged 1994, 369–386.
- Langó 2000* P. Langó: Megjegyzések a Kárpát-medence X–XI. századi huzalkarperceinek és sodrott karperceinek viseletéhez és használati idejéhez (Beiträge zur Tracht und Benutzungszeit der Draht- und gedrehten Armringe im Karpatenbecken des 10.–11. Jahrhunderts). JAMÉ 42 (2000) 33–57.
- Langó 2005* P. Langó: Archaeological research on the conquering Hungarians: A review, in: B. G. Mende (ed.): Research on the prehistory of the Hungarians: A review. VAH 18. Budapest 2005, 175–340.
- Langó 2010* P. Langó: Crescent-shaped Earrings with Lower Ornamental Band, in: F. Daim – J. Drauschke (Hrsg.): Byzanz – das Römerreich im Mittelalter 3. Peripherie und Nachbarschaft. Mainz 2010 369–410.
- Langó 2012* P. Langó: A csúcsban összefutó, belső ívvel és áttört lappal rendelkező, félhold alakú fülbevalók elterjedése és klasszifikációja Közép- és Kelet-Európa 10–11. századi leletanyaga alapján (The spread and classification of peak terminated crescent shaped earrings with inner band and openwork plate in the Eastern European archaeological material), in: Zs. Petkes (ed.): Hadak útján XX. Népvándorlaskor Fialat Kutatóinak XX. összejövedele. Budapest – Szigethalom, 2010. október 28–30. Budapest 2012, 205–228.
- Langó 2019* P. Langó: 10. századi emlékek Jászfényszaru határából [10th-century finds from the vicinity of Jászfényszaru], in: A. Gulyás (ed.): A Jászság kapuja, Jászfényszaru. Régészeti tanulmányok Jászfényszaruról. Jászfényszaru 2019, 125–133.
- Lenhossék 1882* J. Lenhossék: A Szeged-öthalmi ásatásokról, különösen az ott felfedezett ősmagyar, ó-római és kelta sírokban talált csontvázakról [On the excavations carried out in Szeged-Öthalom, especially the skeletons found in the early Hungarian, ancient Roman, and Celtic burials]. Budapest 1882.
- Makarov 2012* Н. А. Макаров (ed.): Русь в IX–X веках: археологическая панорама. Москва 2012.
- Malenko 1976* В. Маленко: Нови археолошки наодина локалитетите „Козлук”, „Габавци” и „Св. Еразмо”. (New Archaeological Finds in the Sites Kozluk, Gabavici, and Sv Erazmo.) MacAA 2 (1976) 219–235.
- Maneva 1992* Е. Манева: Средновековен накит од Македонија. Скопје 1992.
- Maneva 2000* Е. Манева: Крстеви. Средновековна некропола. Скопје 2000.
- Marusić 1962* В. Marusić: Langobardski i staroslavenski grobovi na Brešcu i kod Malih vrata ispod Buzeta u Istri. ARR 2 (1962) 453–467.
- Mavrodinov 1959* Н. Мавродинов: Старобългарското изкуство: Изкуството на първото българско царство. София 1959.

- Medgyesi 2015* P. Medgyesi: Honfoglalók a békési tájakon. Békés megye jelentősebb 10–11. századi sírleletei [Conquering Hungarian in the landscapes of Békés. The most significant grave finds of Békés county in the 10th and 11th centuries]. A Munkácsy Mihály Múzeum Évkönyve III (40). „Ami csabai...” múzeumi sorozat. Békéscsaba 2015.
- Mesterházy 1984* K. Mesterházy: Rec. Jochen Giesler: Untersuchungen zum Chronologie der Bijelo Brdo-Kultur. Alba Regia 21 (1981) 275–276.
- Mesterházy 1990* K. Mesterházy: Bizánci és balkáni eredetű tárgyak a 10–11. századi magyar sírleletekben I (Gegenstände byzantinischen Ursprungs in den ungarischen Gräberfeldern des 10.–11. Jh. I). FolArch 41 (1990) 87–115.
- Mesterházy 1991* K. Mesterházy: Bizánci és balkáni eredetű tárgyak a 10–11. századi magyar sírleletekben II (Gegenstände byzantinischen Ursprungs in den ungarischen Gräberfeldern des 10.–11. Jh. II). FolArch 42 (1991) 145–177.
- Mesterházy 1993* K. Mesterházy: Régészeti adatok Magyarország 10–11. századi kereskedelméhez [Archaeological data on trade in Hungary in the 10th and 11th centuries]. Századok 127 (1993) 450–468.
- Mesterházy 1994* K. Mesterházy: Az ún. tokaji kincs revíziója (Revision des sog. Tokajer Schatzes). FolArch 43 (1994) 193–242.
- Mészáros 2014* P. Mészáros: Kora Árpád-kori temetőrészlet Fegyő-kettőshalmi dűlőn (An Early Árpadian Age cemetery at Felgyő-Kettőshalmi dűlő), in: A. Anders – Cs. Balogh – A. Türk (eds): Avarok pusztái. Régészeti tanulmányok Lőrinczy Gábor 60. születésnapjára. Budapest 2014, 527–587.
- Mikulčik 1996* И. Микулчиќ: Средновековни градови и тврдини во Македонија. Скопје 1996.
- Miletić 1963* N. Miletić: Nakit i oruže IX–XII veka u nakropolama Bosne i Hercegovine. GZM 18 (1963) 155–178.
- Miletić 1967* N. Miletić: Slovenska nekropola u Gomjenici kod Prijedora. GZM 21–22 (1967) 81–154.
- Miletić 1975* N. Miletić: Elementi della cultura di Koettlach in Bosnia e Erzegovina. Balcanoslavica 4 (1975) 93–111.
- Nowotny 2005* E. Nowotny: Das frühmittelalterliche Gräberfeld von Hohenberg, Steiermark, mit Exkursen zur historischen und archäologischen Situation im Ostalpenraum. ArchA 89 (2005) 177–250.
- Nowotny 2013* E. Nowotny: Repräsentation zwischen Karolingerreich und Großmähren. Das Beispiel des Gräberfeldes von Thunau am Kamp, Obere Holzweise, in: M. Hardt – O. Heinrich-Tamáska (Hrsg.): Macht des Goldes. Gold der Macht. Herrschaft- und Jenseitsrepräsentationen zwischen Antike und Frühmittelalter im mittleren Donaunraum. Forschungen zu Spätantike und Mittelalter 2. Weinstadt 2013, 439–459.
- Párducz 1960* M. Párducz: Hunkori szarmata temető Szeged-Öthalmon (Sarmatischer Friedhof aus der Hunnenzeit in Szeged-Öthalom). MFMÉ 1958–59 (1960) 71–100.

- Perišić et al. 1981* C. Перишић – Д. Бојовић – М. Хади-Пешић – З. Маринковић: Накит из збирки Музеја града Београда. Београд 1981.
- Petkes 2012* Zs. Petkes: Honfoglalás- és kora Árpád-kori soros és templom körüli temetők sírleleteinek katasztere Fejér megyében [The register of the grave finds discovered in row cemeteries and churchyards in Fejér county dated to the Conquest and early Árpád periods]. *Alba Regia* 41 (2012) 67–120.
- Petrinec 2003* M. Petrinec: Srebrne sljepoočničarke s Glavičina u Mravincima kraj Solina. *OA* 27 (2003) 529–542.
- Petrinec 2009* M. Petrinec: Gräberfelder aus dem 8. bis 11. Jahrhundert im Gebiet des frühmittelalterlichen kroatischen Staates. *Monumenta Medii Aevi Croatiae* 3. Split 2009.
- Petruhin – Puškina 1996* В. Я. Петрухин – Т. Пушкина: Путь из варяг в греки и из грек / The Road from the Varangians to the Greeks and from the Greeks. Москва 1996.
- Piteša 2014* A. Piteša: Zlato i srebro srednjeg vijeka: u Arheološkom muzeju u Splitu / Medieval gold and silver: in the Archaeological Museum in Split. Split 2014.
- Pittioni 1943* R. Pittioni: Der frühmittelalterliche Gräberfund von Köttlach, Ldkr. Gloggnitz, Niederdonau. *Sonderschriften der Zweigstelle Wien des Archäologischen Institutts des Deutschen Reiches* 14. Brünn – München – Wien 1943.
- Puškina – Muraševa – Einsova 2012* Т. А. Пушкина – В. В. Мурашѐва – Н. В. Ениосова: Гнѐздовский археологический комплекс, in: *Makarov 2012* 242–273.
- Rácz 2009* Zs. Rácz: Avar kori ötvös- és kovácsszerszámok (Smith and goldsmith tools from the Avar period), in: Z. Nagy – J. Szulovszky (eds): *A vasművesség évezredei a Kárpát-medencében / Thousand of Years of Ironcrafts in the Carpathian Basin. Az anyagi kultúra a Kárpát-medencében* 3. Szombathely 2009, 67–96.
- Révész 1996* L. Révész: A karosi honfoglalás kori temetők. Adatok a Felső-Tisza-vidék X. századi történetéhez (Die Gräberfelder von Karos aus der Landnahmezeit. Archäologische Angaben zur Geschichte des Oberen Theißgebietes im 10. Jahrhundert). *MHKÁS* 1. Miskolc 1996.
- Révész 2020* L. Révész: A 10–11. századi temetők regionális jellemzői a Keleti-Kárpátoktól a Dunáig (Regional Features of the 10-11th Century Cemeteries from the Eastern Carpathians to the Danube). Szeged – Budapest 2020.
- Rjabceva 2005* С. Рябцева: Древнерусский ювелирный убор. Санкт-Петербург 2005.
- Ruttkay 1992* A. Ruttkay: O slovensko-maďarských vzťahoch po rozpade Veľkej Moravy a na prahu vzniku stredovekého Uhorska. *Archeologické a historické aspekty. SISt* 2 (1992) [1993] 159–165.

- Ruttkey 2005* A. Ruttkey: A szlovákiai templom körüli temetők régészeti kutatásáról (On the archaeological investigation of churchyards in Slovakia), in: Á. Ritoók – E. Simonyi (eds): „... a halál árnyékának völgyében járok”. A középkori templom körüli temetők kutatása. *Opuscula Hungarica* 6. Budapest 2005, 31–57.
- Schulze-Dörrlamm 2020* M. Schulze-Dörrlamm (Hrsg.): Byzantinische Goldschmiedearbeiten im Römisch-Germanischen Zentralmuseum. Kataloge Vor- und Frühgeschichtlicher Altertümer 42. Mainz 2020.
- Sikora 2019* J. Sikora: Skandynawowie a ziemie polskie w badaniach archeologicznych, in: M. Bogacki – A. Janowski – Ł. Kaczmarek (eds): *Wikingowie w Polsce? Zabytki skandynawskie z ziem polskich*. Gniezno – Szczecin 2019, 31–71.
- Sláma 1977* J. Sláma: *Mittelböhmen im frühen Mittelalter*: Katalog der Grabfunde. *Prähistorica* 5. Praha 1977.
- Sokol 2016* V. Sokol: Medieval Jewelry and Burial Assemblages in Croatia. A Study of Graves and Grave Goods, ca. 800 to ca. 1450. East Central and Eastern Europe in the Middle Ages 450–1450, vol. 36. Leiden – Boston 2016. <https://doi.org/10.1163/9789004306745>
- Šolle 1966* M. Šolle: Stará Kouřim a projevy velkomoravské hmotné kultury v Čechách. Praha 1966.
- Špehar – Zorova 2012* P. Špehar – O. Zorova: Christianity on the territory of the Archbishopric of Ohrid, 11th to the 13th century: archaeological evidence from burial sites, in: M. Salamon – M. Woloszyn – A. Musin – P. Špehar (eds): *Rome, Constantinople and Newly converted Europe. Archeological and Historical Evidence I*. Kraków – Leipzig – Rzeszów – Warszawa 2012, 429–446.
- Šribar – Stare 1975* V. Šribar – V. Stare: Der Karantanisch Kottlacher Kulturkreis. Frühmittelalterlicher Schmuck. Schild von Steier. Beiträge zur Steinschen Vor- und Frühgeschichte und Münzkunde. Kleine Schriften 16. Ljubljana – Graz 1975.
- Stančev 1985* Д. Станчев: Ранносредновековен некропол до с. Батин Русенски окръг. *GMSB* 11 (1985) 45–54.
- Stanilov 2019* С. Станилов: Втората огърлица в Преславското съкровище. София 2019.
- Staššiková-Štukovská 1997* D. Staššiková-Štukovská: Problematika vybraných typov veligradských (byzantsko-orientálnych) náušnic Velkej Moravy z pohľadu doterajších výsledkov výskumu v Borovciach, in: R. Marsina – A. Ruttkey (eds): *Svätopluk: 894–1994: materiály z konferencie organizovanej Archeologickým ústavom SAV v Nitre v spolupráci so Slovenskou historickou spoločnosťou pri SAV, Nitra, 3.-6. octóber, 1994*. Nitra 1997, 197–206.
- Staššiková-Štukovská 2001* D. Staššiková-Štukovská: Vybrané nálezy z pohrebiska v Borovciach z pohľadu začiatkov kostrového pochovania staromoravských a nitrianskych Slovanov (Ausgewählte Funde vom Gräberfeld in Borovce aus der Sicht der beginnenden Körperbestattungsweise der altmährischen und Nitraer Slawen), in: L. Galuška – P. Kouřil – Z. Měřínský (eds): *Velká Morava mezi východem a západem / Großmähren zwischen West und Ost*.

- Sborník příspěvků z mezinárodní vědecké konference: Uherské Hradiště, Staré Město: 28.9.–1.10.1999. Spisy Arch. ústavu AV ČR Brno 17. Staré Město 2001, 371–392.
- Staššíková-Štukovská 2005* D. Staššíková-Štukovská: K byzantskému pôvodu sklenených korálikov v nálezoch z 8.-9. storočia na Morave a Slovensku, in: J. Bartík – V. Turčan (eds): Byzantská kultúra a Slovensko: zborník štúdií. Bratislava 2007, 67–81.
- Štefanovičová 1995* T. Štefanovičová: Zur materiellen Kultur der donauländischen Slawen in der Beziehung zum Südosteuropa, in: T. Štefanovičová (Hrsg.): Mittel-donauegebiet und Südosteuropa im frühen Mittelalter. Studia archaeologica et mediaevalia 1. Bratislava 1995, 87–103.
- Štefanovičová 2004* T. Štefanovičová: K vývoju šperku adriatickej a stredodunajskej oblasti v prvej polovici 9. storočia, in: G. Fusek – D. Bialeková (eds): Zborník na počesť Dariny Bialekovej. Archaeologica Slovaca monographiae. Communicationes 7. Nitra 2004, 389–395.
- Sternberger 1994* Frank Sternberg AG: Auktion XXVII. Antike Münzen Griechen-Römer-Byzantiner. Renaissance-medailen, geschnittene Steine und Schmuck der Antike, antike Kleinkunst. Zürich 1994.
- Szalontai 2016* Cs. Szalontai: A Szeged-öthalmi avar és honfoglalás kori lelőhelyekről (On the avar and hungarian conquest age sites of Szeged-Öthalom), in: T. Csécs – Sz. Merva – M. Takács (eds): Beatus homo qui invenit sapientiam. Ünnepi kötet Tomka Péter 75. születésnapjára. Győr 2016, 687–699.
- Szalontai 2019* Cs. Szalontai: Szeged születése. Megtelepedés a szegedi tájban a város kialakulásáig [The birth of Szeged. Settlement in the landscape around Szeged to urban development]. Opitz Archaeologica 14. Budapest 2019.
- Szalmári 1995* I. Szalmári: Bizánci típusú ereklyetartó mellkeresztek Békés és Csongrád megyében (Die Pektorales byzantinischen Typs als Reliquienschreine im Komitat Békés und Csongrád). MFMÉ StudArch 1 (1995) 219–264.
- Szente 2012* G. Szente: Meister und ihre Kunden. Herstellung und Verbreitung gegossener Bronzegegenstände im spätaurenenzeitlichen Karpatenbecken. ArchÉrt 137 (2012) 57–75.
- Szigeti – Szilágyi 2013* J. Szigeti – V. Szilágyi: Halimba-Cseres 10–12. századi temető kerámia-anyaga (Ceramic Assemblage of the 10–12th Century Cemetery at Halimba-Cseres), in: L. Révész – M. Wolf: A honfoglalás kor kutatásának legújabb eredményei. Tanulmányok Kovács László 70. születésnapjára. Monográfiák a Szegedi Tudományegyetem Régészeti Tanszékéről 3. Szeged 2013, 861–884.
- Szőke 1956* B. Szőke: Koraközépkori temetőásatás Jugoszláviában [Excavations in an early medieval cemetery in Yugoslavia]. ArchÉrt 83 (1956) 101–103.
- Szőke 1959* B. Szőke: A bjelobrdoi kultúráról (Sur la civilisation de Bjelobrdo). ArchÉrt 86 (1959) 38–46.
- Szőke 1962* B. Szőke: A honfoglaló és kora Árpád-kori magyarság régészeti emlékei. [The archaeological remains of the Conquest and the early Árpád periods]. Régészeti tanulmányok 1. Budapest 1962.

- Szőke 2014* B. M. Szőke: The Carolingian Age in the Carpathian Basin. Budapest 2014.
- Szőke 2018* B. M. Szőke: Spätantike Reminiszenzen im Karpatenbecken des 8.–9. Jahrhunderts? *Antaeus* 35–36 (2017–2018) [2018] 291–309.
- Szőke 2020* B. M. Szőke: A Karoling-kor Pannóniában (The Carolingian Age in Pannonia). Budapest 2020.
- Tasić 1998* H. Tasić: Археолошко благо Косова и Мемохије од неолита до раног средњег века. Београд 1998.
- Točík 1968* A. Točík: Slawisch-awarisches Gräberfeld in Holiare. Bratislava 1968.
- Točík 1971* A. Točík: Flachgräberfelder aus dem IX. und X. Jahrhundert in der Südwestslowakei. *SlA* 19 (1971) 135–276.
- Tomičić 1992* Ž. Tomičić: Neuere Erforschung der Bijelo Brdo-Kultur in Kroatien. *Prilozi* 9 (1992) 113–130.
- Tomičić 1996–1997* Ž. Tomičić: Ranosrednjovjekovno groblje Zvonimirovo–Veliko Polje, prinos piznavanju bjelobrdske kulture u podravskom dijelu Slavonije. *Prilozi* 13–14 (1996–1997) [1999] 91–120.
- Tomičić 1997* Ž. Tomičić: Zvonimirovo i Josipovo: groblja starohrvatskoga doba u Virovitičko-podravskoj županiji. Zagreb – Virovitica – Slatina 1997.
- Tomičić 2003* Ž. Tomičić: O nekim vezama ranosrednjovjekovne Slavonije i Dalmacije na primjeru polumjesecolikih naušnica s privejskom. *SHP* 30 (2003) 139–157.
- Tomičić 2010* Ž. Tomičić: Der Süden Pannoniens in der Karolingerzeit. *Antaeus* 31–32 (2010) 93–112.
- Tomičić 2019* Ž. Tomičić: Grobna cjelina 40 s ranosrednjovjekovnog groblja Zvonimirovo–Veliko polje. *Rad HAZU* 54 (2019) 97–123.
- Tomka 2010* P. Tomka: Teil eines Gräberfeldes aus der Karolingerzeit von Himod, Flur Káposztás. *Antaeus* 31–32 (2010) 199–223.
- Totev 1982* T. Totev: The Preslav gold treasure. Sofia 1982.
- Totev 1993* T. Totev: Преславското съкровище. Шумен 1993.
- Török 1962* Gy. Török: Die Bewohner von Halimba im 10. und 11. Jahrhundert. *Archaeologica Hungarica* 39. Budapest 1962.
- Török 2011* L. Török: Adoption and Adaptation. The Sense of Culture Transfer between Ancient Nubia and Egypt. Budapest 2011.
- Türk – Lőrinczy 2015* A. Türk – G. Lőrinczy: Régészeti adatok és természettudományi eredmények a Maros-torkolat nyugati oldalának 10. századi történetéhez. (Archäologische Daten und naturwissenschaftliche Ergebnisse zur Geschichte des 10. Jahrhunderts des westlichen Ufers der Muresch-Mündung), in: *Türk – Lőrinczy – Marcsik 2015* 11–300.
- Türk – Lőrinczy – Marcsik 2015* A. Türk – G. Lőrinczy – A. Marcsik: Régészeti és természettudományi adatok a Maros-torkolat nyugati oldalának 10. századi történetéhez [Archaeological and scientific data related to the 10th-century history of the western

- bank of the Maros estuary]. *Studia ad Archaeologiam Pazmaniensia – MTA BTK Magyar Őstörténeti Kiadványok* 4. Szeged 2015.
- Ungerma* 2005 Š. Ungerma: Ženský šperk staršího velkomoravského horizontu (Frauens Schmuck des älteren großmährischen Horizonts). *AR* 57 (2005) 707–749.
- Ungerma* 2016 Š. Ungerma: „Karantánsko-köttlašký“ šperk na jiozápadním Slovensku a v ďalších částech Karpatské kotliny („Karantanisch-Köttlacher“ Schmuck in der Südwestslowakei und in weiteren Teilen des Karpatenbeckens). *PV* 57 (2016) 11–48.
- Ungerma* 2017 Š. Ungerma: Prachtfingerringe im frühmittelalterlichen Mähren (9.–10. Jahrhundert). Bemerkungen zur Chronologie und Provenienz des großmährischen. *PV* 58 (2017) 19–95.
- Varázsjéi* 1881 G. Varázsjéi: A szeged-őthalmi őstelep és temető [An ancient settlement and cemetery in Szeged-Őthalom]. *ArchÉrt* 14 (1881) 323–336.
- Važarova* 1971 Ж. Н. Въжарова: Славяни и прабългари (тюрко–българи) в светлината на археологическите данни. *ArhSof* 13 (1971) 1–23.
- Važarova* 1976 Ж. Н. Въжарова: Славяни и прабългари по данни на некрополите от VI–XI в. на територията на България. София 1976.
- Važarova* 1980 Ж. Въжарова: Славие южнее Дуная в конце VI–XI веках по некоторым археологическим данным, in: B. Chropovský (ed.): *Rapports du IIIe Congrès International d'Archéologie Slave*. Bratislava 7–14 septembre 1975. Bratislava 1980, 479–493.
- Vörös* 1990 I. Vörös: Kutyaáldozatok és kutyatemetkezések a középkori Magyarországon I (Dog sacrifices and burials in Medieval Hungary). *FolArch* 41 (1990) 117–145.
- Wachowski* 1981 K. Wachowski: Ziemie polskie a Wielkie Morawy. Studium archeologiczne kontaktów w zakresie kultury materialnej / Polen und Großmähren. *Archäologische Studie zu den Kontakten auf dem Gebiete der materiellen Kultur*. *PrzA* 29 (1981) 151–197.
- Welkow* 1942 I. Welkow: Völkerwanderungszeitliche Grabfunde aus Bulgarien. *Germania* 26 (1942) 48–50.
- Wolters* 1998 J. Wolters: Goldschmied, Goldschmiedekunst, in: H. Beck – D. Geuenich – H. Steuer (eds): *RGA* 12 (1998) 362–386.
- Žeravica* 1986 Z. Žeravica: Ranoslovenska nekropola Bagrusa u Petosevcima kod Laktasa. *GZM* 40–41 (1985–1986)[1986] 129–209.
- Zhecheva n. d.* M. Жечева: исторически музей Търговище. София [no date].
- Žilina – Makarova* 2008 Н. В. Жилина – Т. И. Макарова: Древнерусский драгоценный убор – сплав влияний и традиций IX–XIII вв. Москва 2008.
- Živić* 2003 M. Živić: *Felix Romuliana – 50 Years of Solving*. Zaječar 2003.
- Zoll-Adamikowa – Dekówna – Nosek* 1999 H. Zoll-Adamikowa – M. Dekówna – E. M. Nosek: The Early Medieval Hoard from Zawada Lanckorońska (Upper Vistula River). Warszawa 1999.

Table 1. Locations with pendants and earrings decorated with a crescent on their inner arch found outside the Carpathian Basin

Site	Feature	Collection	Material	Type	Total	Dimensions (cm)	Reference	Figure
<b>Slovenia</b>								
1. Ptuj-Grad Podravka region	Grave 104	Ptuj – Ormož Regional Museum Inv. no. 482–483.	Silver	II.3	2	Height: 4.0 Width: 2.5	<i>Jovanović – Vuksanović – Berič 1972 108;</i> <i>Jovanović 1976 136;</i> <i>Korošec 1996–1997 59.</i>	Fig. 10. 2.
2. Ptuj-Grad Podravka region	Grave 296	Ptuj – Ormož Regional Museum Inv. no. 482–483.	Silver	II.3	1	Height: 4 Width: 2.5	<i>Korošec 1996–1997 59.</i>	–
3. Ptuj-Spodnija Hajdina Podravka region	Grave 2	Maribor Regional Museum Inv. no. A 2416.	Silver <sup>1</sup>	II.1	1	Height: 5.27 Width: 3.36 Height of the preserved laminated spherical ornament: 0.9 Largest diameter: 1.2	<i>Korošec 1947 29–30;</i> <i>Jovanović 1976 136;</i> <i>Giesler 1981 166;</i> <i>Bitenec – Knjific 2001 116.</i>	Fig. 9. 1.
4. Svete Gore nad Bizeljsko	Grave 15	Museum of the Posavje Region, Brežice	Silver	II.1	2	1. Height: 4.08 Width: 2.49 2. Height: 4.13 Width: 2.52	<i>Korošec – J. Korošec 1973 Pl. VI.;</i> <i>Korošec 1976 508–509;</i> <i>Jovanović 1976 136;</i> <i>Bitenec – Knjific 2001 119.</i>	Fig. 9. 3.
<b>Croatia</b>								
5. Biskupija-Crkvina Region Šibensko-kninska	Grave 29	Museum of Croatian Archaeological Monuments, Split	Silver	I	4	Height of the pendants (on one side): 7.3 Height of the pendants (on the other side): 6.8 Width: 3.0	<i>Aleksova 1966 54;</i> <i>Jovanović – Vuksanović – Berič 1972 108;</i> <i>Jovanović 1976 135;</i> <i>Mesterházy 1991 108;</i> <i>Petrinec 2009 79, 256.</i>	Fig. 4. 1.
6. Gata-Cemetery around the St. Cyprian's Church	Grave 86	NDA <sup>2</sup>	Silver	I	2	Height: 10.3 Diameter: 4.0 Height of the conical pearl ornaments: 2.0	<i>Petrinec 2009 84, 569.</i>	Fig. 4. 2–3.

<sup>1</sup> In his first publication Josip Korošec still described the find as a bronze artefact (*Korošec 1947 29*).<sup>2</sup> NDA = no data available.



Site	Feature	Collection	Material	Type	Total	Dimensions (cm)	Reference	Figure
7. Podgrađe <sup>3</sup>	Stray finds from early medieval graves	Museum of Croatian Archaeological Monuments, Split	Silver	I	2	Height: 11.5 Diameter: 5.0 Height of the conical pearl ornaments: 1.8	<i>Petrinec 2009</i> 105, 617.	Fig. 4. 4–5.
<b>Serbia</b>								
8. Prahovo Ključ-Negotin Region Borsk	NDA	National Museum in Belgrade	NDA	II.2	1	Height: 2.62 Width: 1.6 Length of the grape-shaped ornament on the outer side of lower arch: 1.3 Width: 0.4 Height of the crescent-shaped ornament on the inner side of the lower arch: 1.0 Width: 0.67	<i>Janković 1983</i> 99, 118, Pl. IV. 5; <i>Mesterházy 1990</i> 107.	Fig. 9. 7.
<b>Kosovo</b>								
9. Mount Čečan (Rigómező – Kosovo polje) Kosovo district	Treasure hoard	National Museum in Belgrade	Silver	I	2	1. Height: 4.4 Width: 2.7 Weight (g): 3.1 2. Height: 4.55 Width: 2.5 Weight: 3.3	<i>Jovanović 1976</i> 123–128; <i>Mesterházy 1990</i> 107–108; <i>Grigorov 2007</i> 40.	Fig. 5. 1.

<sup>3</sup> In her recent study Maja Petrinec (*Petrinec 2009* 60, 105) demonstrated that the pendants were published wrongly associated with the site Đeverske-Ležajića Glavica in former publications (See *Jelovina 1976* 43; *Gunjača – Jelovina 1976*). Scholarly literature (*Jovanović 1976* 135; *Mesterházy 1990* 108) also contains references to a find from Kinin, which was published in a study by Anđela Horvat (*Horvat 1954*). However, the artefact is one of the pendants from Podgrade, as Maja Petrinec brought my attention to it. Hereby, I would like to thank her for her help.

Site	Feature	Collection	Material	Type	Total	Dimensions (cm)	Reference	Figure
10. Matičane-Berg Kosovo district	Grave 46	Kosovo Museum, Pristina Inv. no. 123.	Silver	I	2	Height: 6.27, 6.42	<i>Jovanović – Vuksanović – Berić 1972 108; Jovanović 1976 135; Jovanović – Vuksanović 1981 Y 245; Mesterházy 1990 108; Tasić 1998 363; Bikić 2010 47.</i>	Fig. 5. 3
11. Matičane-Berg Kosovo district	Grave 84	Kosovo Museum, Pristina	Silver	I	2	Height of the intact piece: 5.42 Length of the fragment: 1.6	<i>Jovanović – Vuksanović – Berić 1972; Jovanović 1976 135; Jovanović – Vuksanović 1981 Y 247; Mesterházy 1990 108.</i>	Fig. 5. 2
<b>Bosnia and Herzegovina</b>								
12. Gomjenica-Baltine Bare Banja-Luka district	Grave 21	The National Museum of Bosnia and Herzegovina Inv. no. 449	Bronze	II.2	1	Height: 4.7 Width: 2.9	<i>Miletić 1967 85; Jovanović – Vuksanović – Berić 1972 108; Jovanović 1976 135; Giesler 1981 165; Mesterházy 1990 107.</i>	Fig. 10. 1.
13. Gomjenica-Baltine Bare Banja-Luka district	Grave 161	The National Museum of Bosnia and Herzegovina Inv. no. 1457	Bronze	II.3	1	Height: 4.6 Width: 2.9	<i>Miletić 1967 101–102; Miletić 1975 102.</i>	Fig. 9. 2.
<b>Macedonia</b>								
14. Bitola (Herakleia- Bitola) Pelagonia district	Grave 52	NDA	Silver	II.1	1	NDA	<i>Maneva 1992 53; Mikulčik 1996 143; Grigorov 2007 40; Janković 2007 53.</i>	Fig. 9. 4.
15. Demir Kapija	Grave 336	NDA	Silver	II.1	2	Height: 2.5, Width: 0.9	<i>Aleksova 1966 44.</i>	–
16. Demir Kapija	Stray find	NDA	Silver	I	2	NDA	<i>Aleksova 1966 53–54;<sup>4</sup> Jovanović – Vuksanović – Berić 1972 108; Jovanović 1976 135; Mesterházy 1990 108; Maneva 1992 53.</i>	Fig. 6. 1–3.

<sup>4</sup> Probably, the photograph of this object was published by Blaga Aleksova in 1966. However, the artifact with several differences showed up in a later publication, see *Aleksova 1970 98*.

Site	Feature	Collection	Material	Type	Total	Dimensions (cm)	Reference	Figure
17. Negotin	NDA	NDA	Silver	I	2	NDA	<i>Maneva 1992 53;</i> <i>Grigorov 2007 40.</i>	Fig. 6. 4–5.
18. Krstevi	Grave 4	NDA	Silver	I	2	Height: 6.3 Width: 6.0	<i>Maneva 2000 55, 87;</i> <i>Grigorov 2007 40;</i> <i>Spehar – Zorova 2012 437.</i>	Fig. 6. 6–10.
19. Krstevi	Grave 9	NDA	Silver	I	2	Height: 3.4 Width: 1.9	<i>Maneva 2000 55, 91.</i>	Fig. 7. 1.
20. Krstevi	Grave 17	NDA	Silver	I	2	Height: 3.4 Width: 1.9, 2.2	<i>Maneva 2000 55, 99.</i>	Fig. 7. 2.
21. Sten'e-Golem grad-Prespa	Grave 55	NDA	Bronze	II.1	2	NDA	<i>Bitrakova 1988 208;</i> <i>Maneva 1992 53;</i> <i>Janković 2007 53;</i> <i>Grigorov 2007 40.</i>	Fig. 9. 5–6.
<b>Bulgaria</b>								
22. Dolni Lukovit	Grave 85	NDA	Bronze	II.3	2	Height: 3.5 Width: 1.5	<i>Važarova 1976 210;</i> <i>Važarova 1980 489;</i> <i>Grigorov 2007 40.</i>	Fig. 10. 3.
23. Kaliakra	Grave find	Yordan Yovkov Museum in Dobrich	Silver	I	1	NDA	<i>Bobčeva 1982 108.</i>	Fig. 8. 5.
24. Kavarna-Vasil Levski ul. 17. excavated area of the cemetery	Grave find	NDA	Silver	I	2	Height: 4.2 Width: 2.6	<i>Važarova 1976. 333;</i> <i>Jovanović 1976 135;</i> <i>Mesterházy 1990 108;</i> <i>Grigorov 2007 40.</i>	Fig. 8. 1–2.
25. Kragulevo	Grave 26	NDA	Bronze	II.3	1	NDA	<i>Bobčeva 1984 56;</i> <i>Grigorov 2007 40.</i>	Fig. 10. 5.
26. Novgrad-Iridiol-Kriveblato Ruse region	NDA	Historical Museum in Svishtov Inv. no. 942	Bronze	II.3	1	NDA	<i>Hensel 1961 259;</i> <i>Jovanović 1976 135.</i>	Fig. 10. 6.

Site	Feature	Collection	Material	Type	Total	Dimensions (cm)	Reference	Figure
27. Odarci	Stray find from Polish excavation sector	The National Archaeological Institute with Museum, BAS	Bronze	II.2	1	Height: 5.9 Width: 2.8	<i>Dymaczewska – Dymaczewski 1980</i> 166; <i>Mesterházy 1990</i> 108; <i>Dončeva-Petkova et al. 1999</i> 100–101; 160; <i>Grigorov 2007</i> 40.	Fig. 9. 9.
28. Zlati dol Haskovo region	NDA	NDA	NDA	II.2	1	NDA	<i>Jovanović 1976</i> 135; <i>Mesterházy 1990</i> 108; <i>Grigorov 2007</i> 40.	Fig. 9. 8.
29. Stray find Northern Bulgaria	Stray find	NDA	NDA	II	1	NDA	<i>Grigorov 2004</i> 70; <i>Grigorov 2007</i> 40.	Fig. 10. 4.
30. Stray find Targoviste region	Stray find, cemetery	Regional Historical Museum of Targovishte	Silver	I	2	NDA	<i>Zhecheva n.d.</i> 4.	Fig. 8. 3–4.
31. Stray find	Stray find	The National Archaeological Institute with Museum, BAS Inv. no. 42831	Silver	I	2	Height: 6.8 Width: 3.3	<i>Kapelkova 2006.</i>	Fig. 8. 6–7.
<b>Greece</b>								
32. Aerino Pref. Magnesia	Grave find	Archaeological Site of Nea Anchialos Inv. no. E. E. 63.1.; E. E: 64.2.	Bronze	II.3	2	Height: 4.9 Width: 2.5	<i>Cat. Athens 2002</i> 585; <i>Bosselman-Ruickbie 2011</i> 255.	Fig. 10. 7–8.
33. Agia Triada	Cemetery	7th Ephorate of Byzantine Antiquities	Silver	I	2	NDA	<i>Deriziotis – Kougioumtzoglou 2005</i> 169.	Fig. 8. 10–11.
34. Azoros Pref. Larissa	Cemetery	7th Ephorate of Byzantine Antiquities	Silver	I	4	NDA	<i>Deriziotis – Kougioumtzoglou 2005</i> 156.	Fig. 8. 12–15.
<b>Unknown site</b>								
35. Stray find	Unknown	Private Collection	Silver	I	2	Height: 4.23 Width: 4.27	<i>Sternberger 1994</i> 833.	Fig. 8. 8–9.

Table 2. Locations with crescent-shaped earrings with a wavy inner plate and a four-pronged (“pine-cone-shaped”) pendant: the 9th-century antecedents of the crescent-shaped earrings and the 10th–11th-century artefacts found outside the Carpathian Basin

Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
<b>Hungary</b>							
1. Zalavár-Vársziget, Hadrianus church	Grave 157/99	Hungarian National Museum, Budapest Inv. no. 2013. 117.1–2.Z.	I	2	Height: 3.2	<i>B. M. Szóke 2014 98;</i> <i>B. M. Szóke 2020 440, 442.</i>	Fig. 14. 5.
<b>Poland</b>							
2. Borucin woj. wrocławskie	Treasure hoard	NDA	I	2 fragments	NDA	<i>Dostál 1965 384;</i> <i>Kóčka-Krenz 1993 231;</i> <i>Zoll-Adamikowa–Dekówna–Nosek 1999 fig. 7;</i> <i>Petrinec 2009 267.</i>	–
3. Człuchów woj. śląskie	Grave find	NDA	I	2	NDA	<i>Dostál 1965 384;</i> <i>Kóčka-Krenz 1993 230;</i> <i>Petrinec 2009 267.</i>	–
4. Near to Gniezno woj. poznańskie	Treasure hoard	NDA	I	2 fragments	NDA	<i>Kóčka-Krenz 1993 231.</i>	–
5. Gostyń woj. legnickie	Treasure hoard	NDA	I	1 intact piece, 2 fragments	NDA	<i>Dostál 1965 384–386;</i> <i>Wachowski 1981 178;</i> <i>Kóčka-Krenz 1993 231;</i> <i>Petrinec 2009 267.</i>	Fig. 16. 3.
6. Kania woj. szecińskie	Treasure hoard	NDA	I	2 fragments	NDA	<i>Dostál 1965 384;</i> <i>Kóčka-Krenz 1993 230;</i> <i>Petrinec 2009 267.</i>	–
7. Kotowice woj. wrocławskie	Treasure hoard	NDA	I	2 fragments	NDA	<i>Kóčka-Krenz 1993 231.</i>	–
8. Łęczycza woj. płockie	Treasure hoard	NDA	I	1 intact piece, 1 fragment	NDA	<i>Kóčka-Krenz 1993 231.</i>	–
9. Meschwitz	Treasure hoard	NDA	I	1	NDA	<i>Kóčka-Krenz 1993 231.</i>	–
10. Nojewo woj. poznańskie	Treasure hoard	NDA	I	1 intact piece, 3 fragments	NDA	<i>Kóčka-Krenz 1993 230.</i>	–

Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
11. Obra Nowa	Treasure hoard	NDA	I	1 intact piece, 2 fragments	NDA	Ćorović–Ljubinković 1964 fig. 5; Dostál 1965 384–385; Wachowski 1981 178; Kóčka-Krenz 1993 231; Petřinec 2009 267.	Fig. 16. 4.
12. Obrzycko woj. poznańskie	Treasure hoard	NDA	I	1 intact piece, 3 fragments	NDA	Dostál 1965 384; Kóčka-Krenz 1993 230.	–
13. Prenzlau- Alexanderhor	Treasure hoard	NDA	I	2 fragments	NDA	Kóčka-Krenz 1993 231.	–
14. Sejkowice woj. płockie	Treasure hoard	NDA	I	2 fragments	NDA	Kóčka-Krenz 1993 231.	–
15. Trójca woj. płockie	Treasure hoard	NDA	I	2 fragments	NDA	Kóčka-Krenz 1993 231; Zoll-Adamikowa – Dekówna – Nosek 1999 109.	–
16. Tum woj. tarnobrzeskie	Treasure hoard	NDA	I	1 intact piece, 1 fragment	NDA	Kóčka-Krenz 1993 231.	–
17. Zalesie woj. konińskie	Treasure hoard	NDA	I	10 fragments	NDA	Dostál 1965 384; Wachowski 1981 178; Kóčka-Krenz 1993 231; Zoll-Adamikowa – Dekówna – Nosek 1999 110; Petřinec 2009 267.	Fig. 16. 7.
18. Zawada Lanckorońska woj. tarnowskie	Treasure hoard	Archaeological Museum of Kraków Inv. no. 10157/75.	I	2 intact pieces, 10 fragments	Height of intact pieces: 5.2 Width: 3.2	Dostál 1965 384–386; Wachowski 1981 178; Petřinec 2009 267.	Fig. 16. 8, Fig. 18.
<b>Czech Republic</b>							
19. Breclav-Pohansko	Treasure hoard	The Institute of Archaeology and Museology, Faculty of Arts, Masaryk University in Brno	I	1 intact piece, 3 fragments	Height: 2.5	Hensel 1961 54; Dostál 1965 384–386; Zoll-Adamikowa – Dekówna – Nosek 1999 fig. 5; Tomičić 2003 154–155.	Fig. 16. 1.

Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
20. Dolní-Věstonice-Písky	Grave 742/57	The Institute of Archaeology of the Academy of Sciences of the Czech Republic, Brno Inv. no. 1364/1	I	1	Height: 3.2 Width: 1.7	<i>Dostál 1965 384;</i> <i>Dostál 1966 41.</i>	Fig. 16. 2.
21. Kouřim	Grave 136		I	1	Height: 2.4 Width: 1.5 Thickness: 0.2	<i>Dostál 1965 384–386;</i> <i>Šolle 1966 153, 273–274.</i>	Fig. 16. 5.
22. Lanžhot Jihomoravský region	Grave 6	Archologické muzeum Břeclav-Pohansko Inv. no. 30237; 30247.	I	2	Height: 2.3	<i>Dostál 1965 384;</i> <i>Dostál 1966 41, 139.</i>	Fig. 16. 6.
23. Mikulčice-Valy	Grave 714	The Institute of Archaeology of the Academy of Sciences of the Czech Republic, Brno Inv. no. 594-3010/58.	I	1	Height: 2.6 Width: 1.7	<i>Cat. Brno 2014 401, no. 216.</i>	–
24. Pohansko-Ducal Manor		The Institute of Archaeology and Museology, Faculty of Arts, Masaryk University in Brno Inv. no. P 1060–1061.	I	2	Height: 3 Width: 1.7	<i>Cat. Brno 2014 404, no. 224.</i>	–
25. Staré Mesto „Na valách”	Grave 103	Moravian Museum Brno	I	1	NDA	<i>Dostál 1966 41.</i>	Fig. 16. 9.
26. Staré Mesto „Na valách”	Grave 40/51	Moravian Museum Brno Inv. no. 105656.	I	2	Height: 3.3	<i>Dostál 1966 41;</i> <i>Zoll-Adamikowa – Dekówna – Nosek 1999 110;</i> <i>Tomicić 2003 153–154.</i>	Fig. 16. 10.
27. Uherské Hradiště-Sady	Grave 87/60	Moravian Museum Brno Inv. no. 105713–105714.	I	2	Height: 2.8 Width: 1.1	<i>Galuska 1996 138, 154.</i>	Fig. 16. 13–14.
<b>Slovakia</b>							
28. Ducové (Ducó) district Piestřany	Grave 1460	Institute of Archaeology of Slovak Academy of Sciences, Nitra Inv. no. 161k–162k	I	2	Height: 4.7 Width: 2.6	<i>Ruttikay 1991 159;</i> <i>Hamuliak 2004 169, 316,</i> <i>Tab. Xxxiv. 8–9.</i>	Fig. 16. 11–12.

Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
29. Holiare (Gellér) district Nitra	Grave II	Institute of Archaeology of Slovak Academy of Sciences, Nitra	I	2	Height: 4.0–4.4 Width: 2.3	<i>Točilk</i> 1968 116, Taf. Lxxxviii. 8–10; <i>Tomicić</i> 2003 153–154; <i>Hamuliak</i> 2004 169, 262, 318. Tab. Xxxvi. 5.	Fig. 16. 15–16, Fig. 17. 13–15.
30. Ondrohó (Lipová – Ondrochov) district Nové Zámky	Stray find from the cemetery	Institute of Archaeology of Slovak Academy of Sciences, Nitra	I	1	Height: 3.9	<i>Točilk</i> 1971 269. Taf. Lv. 12; <i>Hamuliak</i> 2004 169, 332. Tab. L. 9.	Fig. 17. 1–2.
31. Vágbori (Borovce) district Piest'any	Grave 26	NDA	I	2	NDA	<i>Stašilková – Štukovská</i> 2001 373.	Fig. 17. 3–4.
<b>Austria</b>							
32. Köttlach	NDA	Museums für Urgeschichte des Landes Niederösterreich in Asparn a. d. Zaya Inv. no. 8274a	II	2	Height: 5.5, 5.4 Width: 2.9, 3.0	<i>Pittioni</i> 1943 15; <i>Dostál</i> 1965 385; <i>Šribar – Stare</i> 1975 37–38; <i>Giesler</i> 1981 98, Abb. 14/10; <i>Mesterházy</i> 1991 145.	Fig. 17. 5–6.
<b>Slovenia</b>							
33. Ptuj <sup>1</sup>	Grave 350	Regional Museum Ptuj Ormož Inv. no. S 549.	I	1 <sup>2</sup>	Height: 3.15 Width: 1.94	<i>Korošec</i> 1966 185; <i>Dostál</i> 1965 384; <i>Petrinec</i> 2009 266–267.	Fig. 17. 7–8.
<b>Croatia</b>							
34. Bohinjska Srednja vas	NDA	NDA	NDA	1	NDA	<i>Dostál</i> 1965 385.	–
35. Buzet žup. Istarska	NDA	NDA	NDA	1	NDA	<i>Dostál</i> 1965 385.	–
36. Knin-Plavno (Medine) Žup. Knin	Stray find	Museum of Croatian Archaeological Monuments, Split Inv. no. 1084.	II	1	Height: 3.3 Width: 2.5	<i>Karaman</i> 1940 29; <i>Gunjača</i> 1960 7; <i>Dostál</i> 1965 385; <i>Jelovina</i> 1976 T. Lxxi. 11; <i>Giesler</i> 1981 165; <i>Mesterházy</i> 1991 145; <i>Grigorov</i> 2007 36; <i>Gunjača</i> 2009 67; <i>Petrinec</i> 2009 266.	Fig. 17. 9.



Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
37. Zadar-Sv. Petar Stari	NDA	NDA	I	1	NDA	<i>Tomičić 2003 153–154.</i>	Fig. 17. 10.
<b>Serbia</b>							
38. Felix Romuliana Gamzingrad Zaječar region	Stray find from 1955	National Museum, Zaječar Inv. no. 1565.	II	1	Width: 2.4	<i>Živić 2003 194.</i>	Fig. 17. 11.
39. Grocka-ul. Sava Kovačevića 8. Grocka region	Stray find from the area of the bath, SE section of the site, found in 1996	National Museum, Belgrad Inv. no. AC I. 209.	III	1	Height: 4.5 Width: 2.5	<i>Bajalović – Hacı-Pešić 1984 58;</i> <i>Grigorov 2007 36.3</i>	Fig. 17. 12.
40. Karaburma Palilula region	Cemetery	NDA	II	NDA	NDA	<i>Grigorov 2007 36;</i> <i>Petrinec 2009 266.</i>	–
41. Kavadar-Levač	Stray find	Regional Museum of Jagodina IIKY 4064.	II	1	Height: 3.3 Width: 2.4	<i>Krstić 1997 329, 344.</i>	–
42. Kladovo Borski region	Stray find	Museum of Applied Art, Belgrad Inv. no. 699.	II	1	Height: 2.8 Width: 2.1	<i>Čorović-Ljubinković 1951 52, fig 18. 6;</i> <i>Fig. 19. 1.</i> <i>Dostál 1965 385;</i> <i>Giesler 1981 165;</i> <i>Mesterházy 1991 145;</i> <i>Grigorov 2007 36.</i>	Fig. 19. 1.
43. Klostar	NDA	NDA	NDA	NDA	NDA	<i>Dostál 1965 385.</i>	–
44. Kostolac	NDA	National Museum, Belgrad	II	3	Height: 4.2	<i>M. Janković – Janković 1990 96–97.</i>	Fig. 19. 2.
45. Mačvanska-Mitrovica	Stray find	Museum of Srem	II	1	NDA	<i>Ercegović-Pavlović 1980</i> Pl. XXvi. 18.	Fig. 19. 3.

<sup>1</sup> At the site, Korošec also reconstructed a type of earring belonging to this group in connection with Grave 341, in 1966. In his work of 1999, however, P. Korošec published only a strongly fragmented piece of ring jewellery (*Korošec 1999 Taf. 36. 2*). Based on these, the reconstruction of the type of the object is questionable.

<sup>2</sup> According to *Korošec 1966*, there were two items in the grave. In 1999, however, Korošec reconstructed only one such item (*Korošec 1999 Taf. 36*). In this case, the other object is a crescent-shaped earring made of sheet metal.

Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
46. Vinča	Cemetery	National Museum in Belgrad Inv. no. 51.	II	1	Height: 4.8 Width: 2.5	Ćorović-Ljubinković 1951 52, fig 18. 4; <i>Dostál 1965 385; Grigorov 2007 36.</i>	Fig. 19. 4.
47. Unknown site near the Danube, between Ritopek, Dubravice Grocka region	Stray find	Museum of Applied Art, Belgrad Inv. no. 697.	II	1	Height: 3.4 Width: 3.2	Ćorović-Ljubinković 1951 52, fig 18. 3; <i>Grigorov 2007 36.</i>	Fig. 19. 5.
48. Unknown site	Stray find	Museum of Applied Art Inv. no. 1096–1097.	II	2	Height: 4.7, 5.0 Width: 3.0, 2.9	Ćorović-Ljubinković 1951 52, fig 18. 1–2.	Fig. 19. 6–7.
49. Unknown site	Stray find	Museum of Applied Art Inv. no. 700.	II	1	Height: 4.0 Width: 2.8	Ćorović-Ljubinković 1951 52, fig 18. 5.	Fig. 19. 8.
50. Unknown site	Stray find	National Museum in Belgrad Inv. no. I. 2022.	II	1	Height: 4.9 Width: 2.7	<i>Bajalović – Hacı-Pesić 1984 66.</i>	Fig. 19. 9.
51. Unknown site	Stray find	National Museum in Belgrad Inv. no. I. 2026.	II	1	Height: 4.4 Width: 2.6	<i>Bajalović – Hacı-Pesić 1984 66.</i>	Fig. 19. 10.
52. Unknown site	NDA	National Museum in Belgrad	II	1	NDA	<i>Kovačević 2003 57.</i>	Fig. 19. 11.
<b>Bosnia and Herzegovina</b>							
53. Bosanska Gradiska- Junuzovci	Cemetery	NDA	III	1	NDA	<i>Korošec – Vračko 1942 280;</i> <i>Miletić 1963 162–163;</i> <i>Dostál 1965 385;</i> <i>Miletić 1975 102.</i>	Fig. 19. 12.
54. Dubravice (Konjic)	NDA	NDA	NDA	NDA	NDA	<i>Grigorov 2007 36.</i>	–
<b>Albania</b>							
55. Durrës	NDA	NDA	NDA	NDA	NDA	<i>Dostál 1965 385.</i>	–
56. Kalaja e Dalmacës	NDA	NDA	NDA	NDA	NDA	<i>Dostál 1965 385.</i>	–

<sup>2</sup> According to *Korošec 1966*, there were two items in the grave. In 1999, however, *Korošec* reconstructed only one such item (*Korošec 1999* Taf. 36). In this case, the other object is a crescent-shaped earring made of sheet metal.

Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
<b>Bulgaria</b>							
57. Balik	NDA	NDA	II	1	Height: 2.7 Width: 1.9 Length of the prismatic ornament: 1.3	<i>Grigorov 2007</i> 36, 156, fig. 19. 16.	Fig. 19. 13.
58. Balik	NDA	NDA	II	1	Height: 3.7 Width: 2.4 Length of the prismatic ornament: 2.0	<i>Grigorov 2007</i> 36, 156, fig. 19. 12.	Fig. 19. 14.
59. Batin-2	NDA	NDA	II	1	Height: 4.6 Width: 2.8 Length of the prismatic ornament: 1.5	<i>Grigorov 2007</i> 36, 156, fig. 19. 13.	Fig. 19. 15.
60. Galiče Mihajlovgrad region	Grave 27	NDA	I	1	Height: 1.6 Width: 3 Length of the prismatic ornament: 1.5	<i>Važarova 1971</i> 6; <i>Važarova 1976</i> 232, 234; <i>Tomičić 2003</i> 153–154. <i>Grigorov 2007</i> 36; 156.	Fig. 19. 16.
61. Garlica-Ostrov	NDA	NDA	II	1	Height: 3.9 Width: 3.0 Length of the prismatic ornament: 1.5	<i>Grigorov 2007</i> 156, fig. 19. 10.	Fig. 20. 6.
62. Rujno Siliistra region	NDA	NDA	II	1	Height: 3.15 Width: 2.2 Length of the prismatic ornament: 1.6	<i>Grigorov 2007</i> 156, fig. 19. 14.	Fig. 20. 1.

Site	Feature	Collection	Type	Total	Dimensions (cm)	Reference	Figure
63. Središe	NDA	NDA	II	1	Height: 3.7 Width: 2.8 Length of the prismatic ornament: 1.4	<i>Grigorov 2007 36, 156, fig. 19. 11.</i>	Fig. 20. 2.
64. Središe	NDA	NDA	II	1	Height: 3.4 Width: 2.6 Length of the prismatic ornament: 1.5	<i>Grigorov 2007 36, 156, fig. 19. 15.</i>	Fig. 20. 3.
65. Targovishte region	Stray find	Regional Historical Museum of Targovishte	II	1	NDA	Unpublished	Fig. 17. 16.
66. Trojan Loveč region	NDA	NDA	II	1	NDA	<i>Welkow 1942 48, Taf. 9;</i> <i>Giesler 1981 95, 218.J;</i> <i>Mesterházy 1991 145, 10.J.</i>	Fig. 20. 5.
67. Northern Bulgaria	Stray find	NDA	II	1	Height: 4.6 Width: 2.8 Length of the prismatic ornament: 1.4	<i>Grigorov 2007 156, fig. 19. 9.</i>	Fig. 20. 4.
<b>Ukraine</b>							
68. Kiev	Grave 112	National Museum of the History of Ukraine	I	2	Height: 3.0 Width: 2.7 Length of the pendant: 1.7	<i>Karger 1958 178–182;</i> <i>Dostál 1965 384–386;</i> <i>Zoll-Adamikowa – Dekówna – Nosek 1999 110.</i>	Fig. 20. 9–11.
<b>Russia</b>							
69. Gnezdovo	Settlement area	NDA	I	1	Height: 5.0 Width: 3.5	<i>Petruhin – Puškina 1996 59–60, no. 370;</i> <i>Zoll-Adamikowa – Dekówna – Nosek 1999 110.</i>	Fig. 20. 12.

